PREVAILING AGAINST PANDEMICS
BY PUTTING PEOPLE AT THE CENTRE

WORLD AIDS DAY REPORT | **2020**

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FOREWORD

This year's World AIDS Day feels very different. COVID-19 has magnified and worsened the deep inequalities that run through our societies. It has shown how intricately linked global health and the global economy are. Years of collective failure to invest sufficiently in comprehensive, rights-based, people-centred health care has left the world deeply exposed.

The COVID-19 pandemic is having far-reaching effects on health systems and other public services. In many countries, HIV services have been disrupted, and supply chains for key commodities have been stretched. Around the world fewer people are being diagnosed with HIV and fewer people living with HIV are starting HIV treatment.

As this report shows, the global HIV response was off track even before the COVID-19 pandemic, but the collision of COVID-19 and HIV has sent it back further. The Fast-Track Targets, which expire at the end of this year, will not be achieved. Thirty-eight million people are living with HIV, with more than 12 million people waiting for life-saving HIV treatment. In 2019, 1.7 million people were newly infected with HIV and 690 000 people died from AIDS-related illnesses.

Investments in HIV and the lessons from how communities have responded to HIV have strengthened the fight against COVID-19. Over the past year, HIV activists and communities have mobilized to defend the gains in the AIDS response, to protect people living with HIV and other vulnerable groups and to push the coronavirus back. They have campaigned for multimonth dispensing of HIV treatment, organized home deliveries of medicines and provided financial assistance, food and shelter to at-risk groups.

Had health systems and social safety nets been stronger, the world would have been better placed to slow the spread of COVID-19 and withstand its impact. We must learn from the mistakes of the past—the

Credit: UNAIDS

legacy of the fight against COVID-19 must be accelerated action to make universal health coverage a global reality.

And there is hope. Promising COVID-19 vaccines are emerging. But we must ensure that these new vaccines are not the privilege of the rich. That is why UNAIDS and partners are calling for a People's Vaccine—one that everyone can access, wherever they live, free of charge.

To get the global HIV response back on track and to build on the gains made so far, UNAIDS is proposing a new set of targets for 2025 that, if achieved, will make the Sustainable Development Goal 3.3 of ending the AIDS epidemic by 2030 possible. These targets are holistic, they focus on a high coverage of HIV and sexual and reproductive health services together with the removal of bad laws and policies and on reducing stigma and discrimination. These targets address the inequalities on which HIV, COVID-19 and other pandemics thrive and put people at the centre, especially the people most at risk and the marginalized—young women and girls, adolescents, sex workers, transgender people, people who inject drugs and gay men and other men who have sex with men. The United Nations General Assembly High-Level Meeting in June 2021 will be a key moment for Member States to recommit and remobilize towards ending the AIDS epidemic as a public health threat.

Ending AIDS means closing gaps and ensuring that no one is left behind. The HIV response is fundamentally about inequality—to end AIDS, we must end inequality. If over the next five years we meet these new targets, end inequalities in HIV treatment and HIV prevention and reduce the stigma and discrimination that holds back the HIV response, the world will be well on its way to ending AIDS by 2030.

No country can defeat the colliding pandemics of HIV and COVID-19 on its own. Such global challenges can only be defeated through global solidarity and shared responsibility. This requires us to be bold, to build on our successes and to learn from our setbacks. It is also our opportunity to re-imagine and build a better future. One where health is no longer a privilege, but a human right, for each and every one of us. One where we are back on track to end the inequalities and injustices that continue to fuel the AIDS epidemic.

Winnie Byanyima
Executive Director, UNAIDS

01

INTRODUCTION AND SUMMARY

Collective global efforts that prioritize people can transform the COVID-19 crisis into an opportunity to accelerate the HIV response.

Five years after a global commitment to Fast-Track the HIV response and end AIDS by 2030, the world is off track. A promise to build on the momentum created in the first decade of the twenty-first century by front-loading investment and accelerating HIV service provision has been fulfilled by too few countries. Important gains in the most affected regions of sub-Saharan Africa and the Caribbean have been counterbalanced by rising epidemics in Latin America, eastern Europe and central Asia, and the Middle East and North Africa. Combined, these successes and failures result in global progress that is far too slow. Agreed milestones for 2020 have been missed. Nearly 700 000 deaths from AIDS-related causes and an 1.7 million new HIV infections in 2019 are unacceptable when effective therapeutics and prevention options are affordable and readily available.

Insufficient investment and action on HIV and other long-running pandemics have also left the world exposed to a new global health threat: COVID-19. Had health systems and social safety nets been even stronger, the world would have been better positioned to slow the spread of the novel coronavirus and withstand its impact.

The need for decisive action against deadly pandemics has never been clearer. Humanity must heed this latest warning to pay much greater attention to building global pandemic response capacity and fulfilling the right to health. There is a solid foundation to build on. The architecture, human resources and experience of the HIV response hold invaluable lessons. People-centred approaches to infectious disease prevention and control—long called for by people living with HIV and other civil society activists—are being accelerated to overcome lockdowns and other disruptions. Collective global efforts that prioritize people can transform the COVID-19 crisis into an opportunity to accelerate the HIV response and efforts to achieve universal health coverage and the Sustainable Development Goals (SDGs).

Getting the response back on track

Getting the HIV response back on track requires new interim targets that can link the present to the commitment to end the AIDS epidemic that is contained within the 2030 Agenda for Sustainable Development. UNAIDS has worked with partners to review the available evidence and develop a set of proposed targets for 2025 that, if achieved, will make that 2030 goal possible. The investment framework that was the basis for previous target-setting exercises was updated to serve as a framework for the 2025 targets.

A series of technical consultations with experts and stakeholders was held across different domains of the response. These consultations reviewed evidence and determined what is currently working and needs to be continued, what is not working and needs to be changed, and which key gaps in the response need to be addressed. A team of epidemiological modelling experts was assembled to project the impact of various approaches and combinations of services.

This process determined that greatly reducing the number of HIV infections and AIDS-related deaths requires providing a core combination of HIV services that have proven to be effective—such as multiple HIV prevention options, HIV testing, antiretroviral therapy, and support to achieve and sustain viral suppression—to very high percentages of people living with HIV and people at greatest risk of infection.

A growing body of evidence shows that achieving high coverage of these services requires both societal conditions that are enabling and people-centred service delivery strategies that integrate other important health and social services. In recognition of this, societal and service enablers have been given much greater prominence in the proposed 2025 targets. The effects of the legal and policy environment, gender inequality, and HIV-related stigma and discrimination have been included in the epidemiological model used to estimate impact. The model shows how societal and legal barriers impede HIV service access, and how removal of these barriers is critical to achieving pandemic response goals.

People-centred 2025 targets

The proposed targets for 2025 fall into three categories:

1. Comprehensive HIV services.

2. People-centred, context-specific service integration.

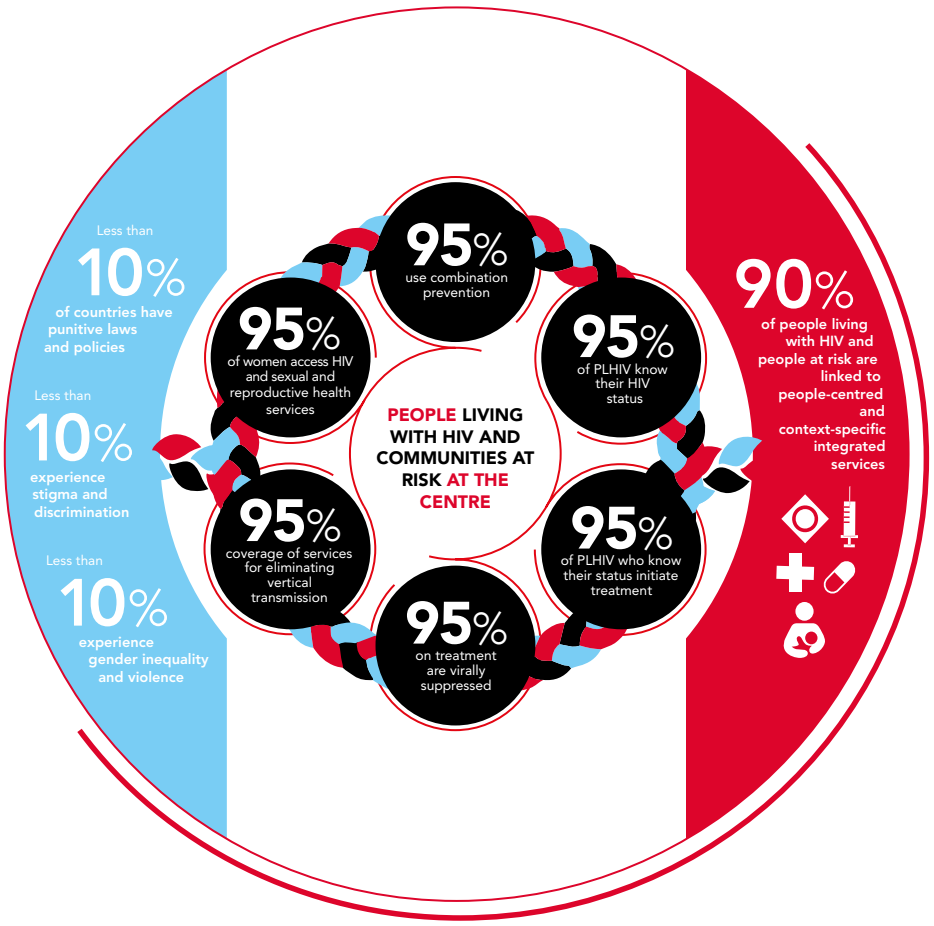
3. Removal of societal and legal impediments to an enabling environment for HIV services.

These three areas weave together and reinforce each other like the braids of a rope, combining to create a whole that is stronger than the individual elements (Figure 1). At the centre of these targets are people living with HIV and people at greatest risk of HIV infection. The 2025 AIDS targets are also situated within the broader global health and development agenda, and critical elements of that agenda cut across the three targets areas.

The targets have been designed to reflect the necessity of expressly designing and delivering services that respond to the needs and preferences of people who are often marginalized by society. In areas of the response where progress lags,

FIGURE 1

Top-line targets for 2025



communities often are the missing ingredient to overcoming bottlenecks and accelerating progress: they deliver essential services, reach those who are often poorly served by health facilities, promote accountability for results, advocate for needed change and inform efforts to make services that are truly people-centred. Filling the gap requires fully engaging these communities as leaders and essential partners in the HIV response, and sufficient financial investment in community-led responses and full integration within national programmes.

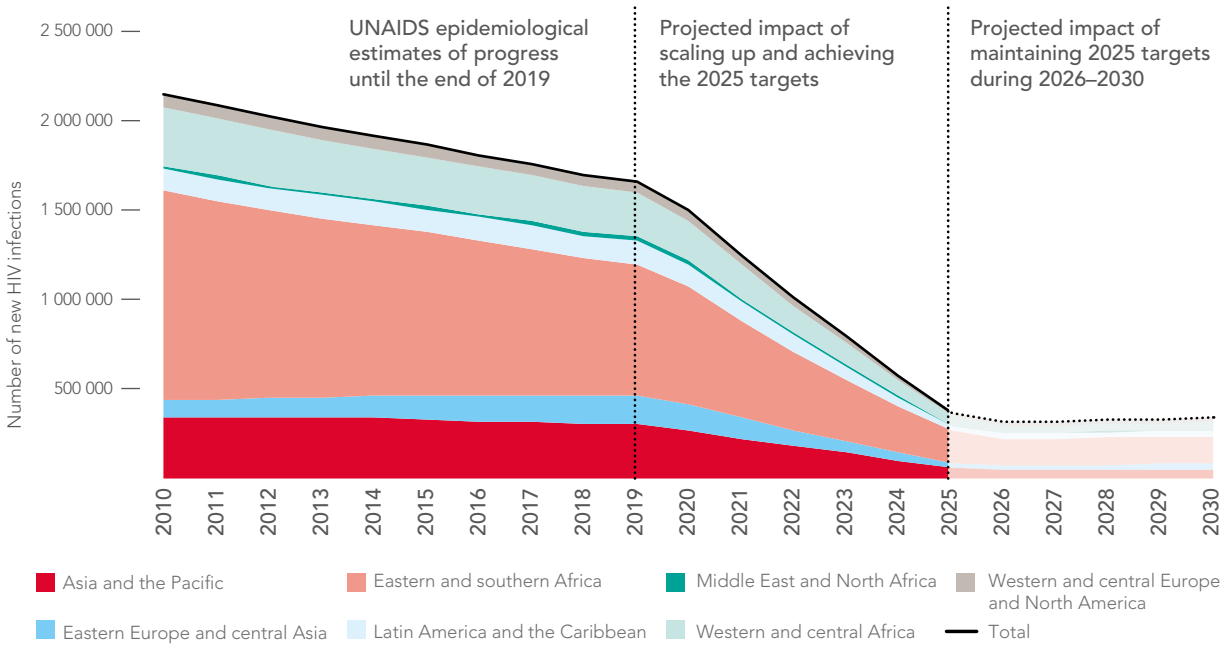
Achieving the 2025 targets will also require an openness to innovation and a commitment to expedite the roll-out of technological and service delivery breakthroughs. These include existing strategies and technologies, such as differentiated HIV testing and treatment delivery models and optimized treatment regimens, and innovations that are on the horizon, such as long-acting regimens for pre-exposure prophylaxis (PrEP) and antiretroviral therapy.

Epidemic modelling shows that achieving these targets by 2025 would get the world very close to the 90% reduction in annual infections by 2030 (using 2010 as a baseline) called for in the SDGs. Similar reductions would be achieved for deaths from AIDS-related causes (Figure 2).

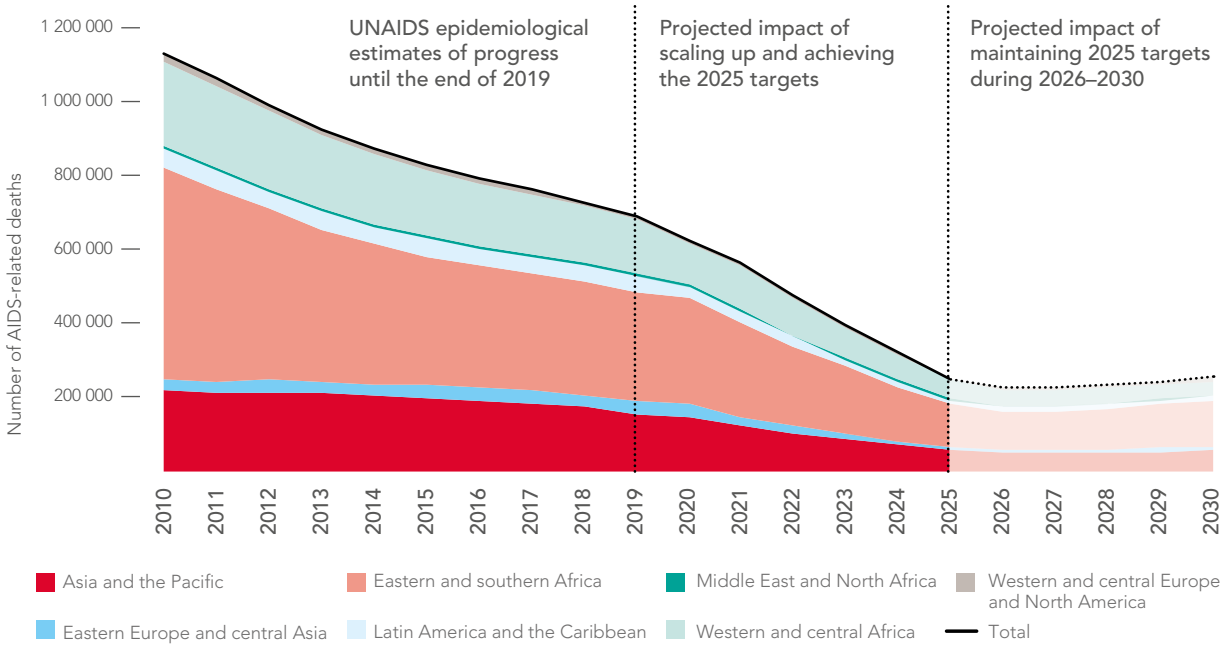
FIGURE 2

Projected impact of reaching the 2025 targets

HIV infections



AIDS-related deaths



Source: Special analysis by Avenir Health using 2025 targets and UNAIDS epidemiological estimates, 2020 (https://aidsinfo.unaids.org/) (see annex on methods).

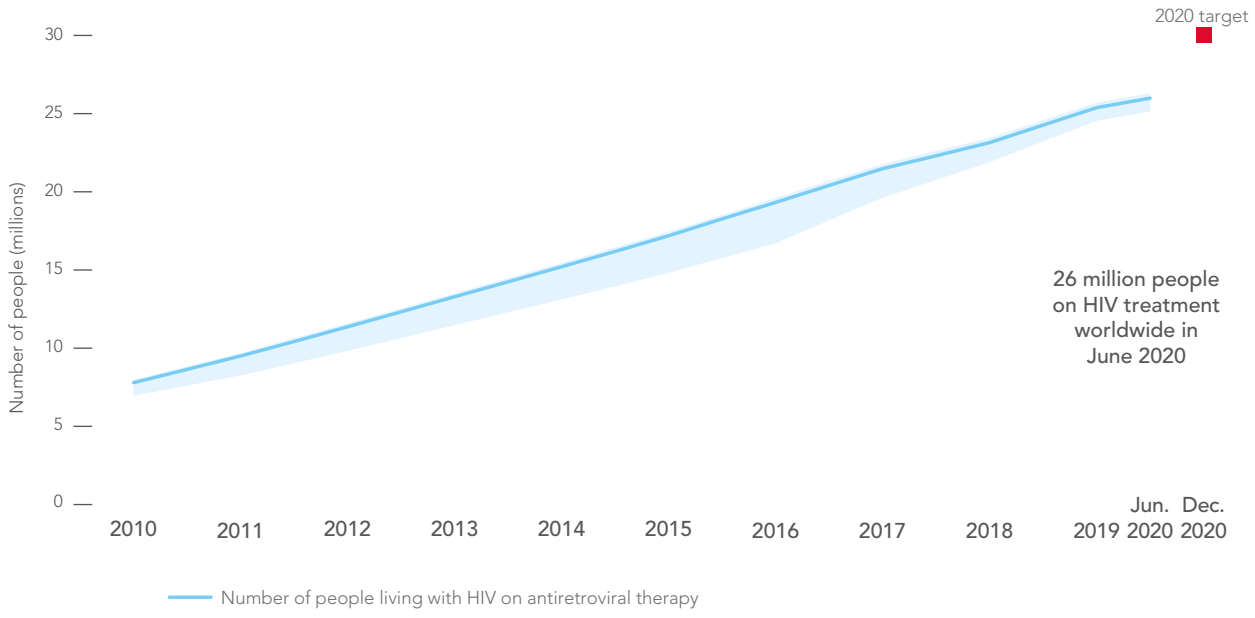
COVID-19 as a historic challenge and opportunity

COVID-19 has spread across the world at a terrifying speed, with waves of infections crashing over countries, cities and communities. This new pandemic has had far-reaching effects on health systems and other public services. HIV services have been disrupted, and supply chains for key commodities have been stretched.

This impact is reflected in dips in lower monthly numbers of new HIV diagnoses and treatment initiations. Fewer people are starting antiretroviral therapy, which is curbing increases in the total number of people living with HIV who are on treatment. An estimated 26.0 million [25.1 million–26.2 million] people were on treatment as of mid-June, up only 2.4% from an estimate of 25.4 million [24.5 million–25.6 million] at the end of 2019. By comparison, treatment coverage increased by an estimated 4.8% between January and June of 2019. Overall, an additional 4 million people would need to be accessing treatment to reach the target for the end of 2020 of 30.0 million (Figure 3).

FIGURE 3

Number of people living with HIV accessing antiretroviral therapy, global, 2010–June 2020 and end-2020 target



Source: UNAIDS 2020 estimates; UNAIDS Global AIDS Monitoring, 2020 (https://aidsinfo.unaids.org/); UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020.

Lockdowns and physical distancing mandates have made it difficult—or even impossible—to conduct face-to-face encounters. Sharp, sudden economic downturns have increased poverty and hunger, and there are fears that diminishing fiscal space in many countries will inevitably limit domestic investments in the HIV response in coming years.

At the same time, however, the COVID-19 pandemic has underscored the agility of the HIV response and the many spillover benefits of HIV investments in health systems and development infrastructure. Through policy and service delivery innovations—and especially through the innovation of communities—the HIV response has in large measure risen to the challenge posed by the COVID-19 pandemic, ensuring continuity of services in the face of extraordinary impediments. COVID-19 is likely to have concrete negative effects on the trajectory of the HIV response. Despite this, the ability of HIV programmes to adapt inspires confidence that these negative effects could, with necessary investment, be short-lived.

The HIV and COVID-19 pandemics and their responses underscore the importance of increasing the resilience of societies and health systems, and the importance of addressing underlying inequalities. The speed with which the virus that causes COVID-19 has spread around the world has also been a stark reminder of the increased interconnectedness of communities and countries in the twenty-first century. No country can defeat these pandemics on their own. Stoking nationalist passions, pointing fingers abroad and hoarding medical advances cannot defeat viruses that do not recognize nationalities or respect borders. The lessons of history show that challenges of this magnitude can only be defeated by forging global solidarity, accepting a shared responsibility and mobilizing a response that leaves no one behind.

02

Доступ к медика
Support, don't punish.
ПОДДЕРЖАТЬ
НЕ НАКАЗЫВАТЬ

THE FAST-TRACK LEGACY—SUCCESSES AND SHORTCOMINGS

Numerous countries have embraced the Fast-Track approach and greatly reduced HIV infections and AIDS-related deaths. However, their gains have been offset by the many countries that are making little or no progress.

A critical turning point in the global HIV response occurred in 2001, when the United Nations (UN) General Assembly laid the groundwork for establishing the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund), and the first steps were taken towards much greater access to HIV testing, treatment, prevention and other services. Subsequent General Assembly High-Level meetings in 2006 and 2011 maintained that momentum.

In 2016, the UN General Assembly made 10 key commitments in the 2016 Political Declaration on Ending AIDS to increase and front-load investment over five years to accelerate the expansion of service coverage and establish momentum to end AIDS as a public health threat by 2030 (Figure 4). Epidemic modelling showed that the fulfilment of these commitments would reduce new HIV infections and AIDS-related deaths to around 500 000 per year by 2020, which is roughly a 75% reduction in the incidence of HIV and of AIDS-related mortality since 2010. The global HIV response entered this new Fast-Track era with considerable optimism.

Numerous countries in multiple regions and epidemic contexts have embraced the Fast-Track approach. However, their gains have been offset by the many countries that are making little or no progress. In entire regions, the response is moving backwards rather than forward, with new infections from 2010 to 2019 increasing by 72% in eastern Europe and central Asia, by 22% in the Middle East and North Africa, and by 21% in Latin America. The vision of Fast-Track—of a world on a clear path by 2020 towards ending AIDS as a public health threat—was not realized. At the global level, none of the 10 commitments have been met. With 10 years left before the deadline for ending the epidemic, a course correction is urgently needed.

FIGURE 4

Fast-Track commitments for 2020

2020 TARGETS MISSED

IMPACT-LEVEL MILESTONES

To reduce new HIV infections to fewer than 500 000 by 2020
To reduce AIDS-related deaths to fewer than 500 000 by 2020
To eliminate HIV-related stigma and discrimination by 2020

10 COMMITMENTS

1

Ensure that 30 million people living with HIV have access to treatment through meeting the 90–90–90 targets by 2020.

2

Eliminate new HIV infections among children by 2020 while ensuring that 1.6 million children have access to HIV treatment by 2018 and 1.4 million by 2020.

3

Ensure access to combination prevention options, including pre-exposure prophylaxis, voluntary medical male circumcision, harm reduction and condoms, to at least 90% of people by 2020, especially young women and adolescent girls in high HIV-prevalence countries and key populations—gay men and other men who have sex with men, transgender people, sex workers and their clients, people who inject drugs and prisoners.

4

Eliminate gender inequalities and end all forms of violence and discrimination against women and girls, people living with HIV and key populations by 2020.

5

Ensure that 90% of young people have the skills, knowledge and capacity to protect themselves from HIV and that they access to sexual and reproductive health services by 2020, in order to reduce the number of new HIV infections among adolescent girls and young women to below 100 000 per year.

6

Ensure that 75% of people living with, at risk of and affected by HIV benefit from HIV-sensitive social protection by 2020.

7

Ensure that at least 30% of all service delivery is community-led by 2020.

8

Ensure that HIV investments increase to US$ 26 billion by 2020, including a quarter for HIV prevention and 6% for social enablers.

9

Empower people living with, at risk of and affected by HIV to know their rights and to access justice and legal services to prevent and challenge violations of human rights.

10

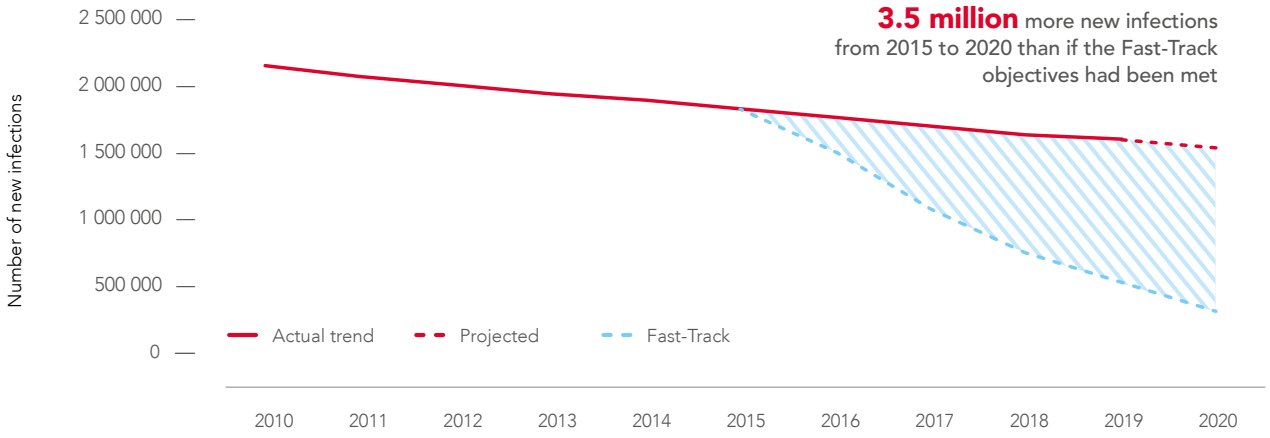
Commit to taking AIDS out of isolation through people-centred systems to improve universal health coverage, including treatment for tuberculosis, cervical cancer and hepatitis B and C.

Towards the three zeros: important but insufficient progress

Results in the quest to realize the vision of the three zeros—zero new HIV infections, zero discrimination and zero AIDS-related deaths—have been mixed in recent years and are well short of global aspirations. The collective failure to invest sufficiently in comprehensive, rights-based and person-centred HIV responses comes at a terrible price: from 2015 to 2020, there were 3.5 million more HIV infections and 820 000 more AIDS-related deaths than if the world were on track to achieve the 2020 targets (Figures 5 and 6).

FIGURE 5

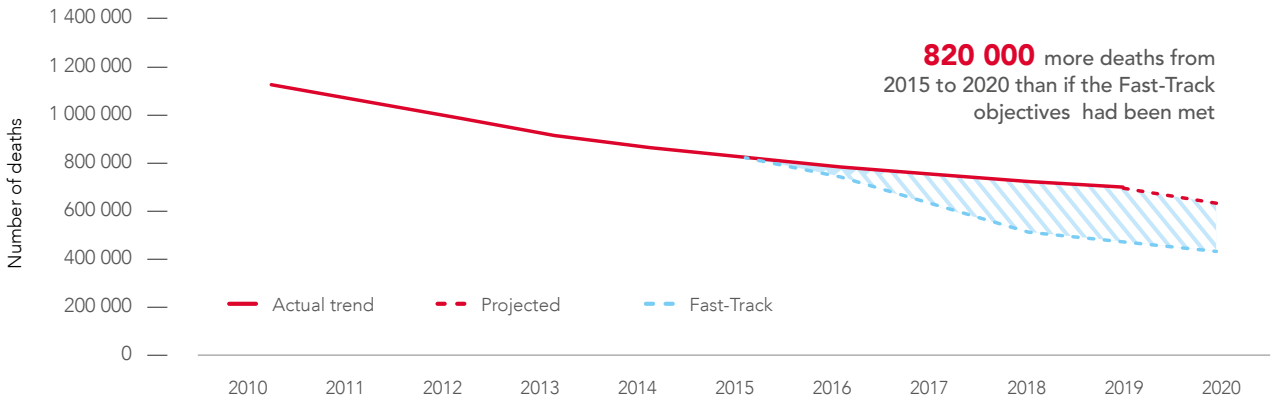
New HIV infections projected through 2020, and modelled prediction resulting from Fast-Track interventions, global, 2010–2020



Source: Special analysis by Avenir Health using UNAIDS epidemiological estimates, 2020 (see https://aidsinfo.unaids.org/).

FIGURE 6

AIDS-related deaths projected through 2020, and modelled prediction resulting from Fast-Track interventions, global, 2010–2020



Source: Special analysis by Avenir Health using UNAIDS epidemiological estimates, 2020 (see https://aidsinfo.unaids.org/).
Note: Methods for the estimation of AIDS-related mortality have been improved since 2016. As a result, the most recent estimates for AIDS-related mortality (orange line) are lower before 2016 than the estimates that were used to calculate the 2020 targets (green dotted line).

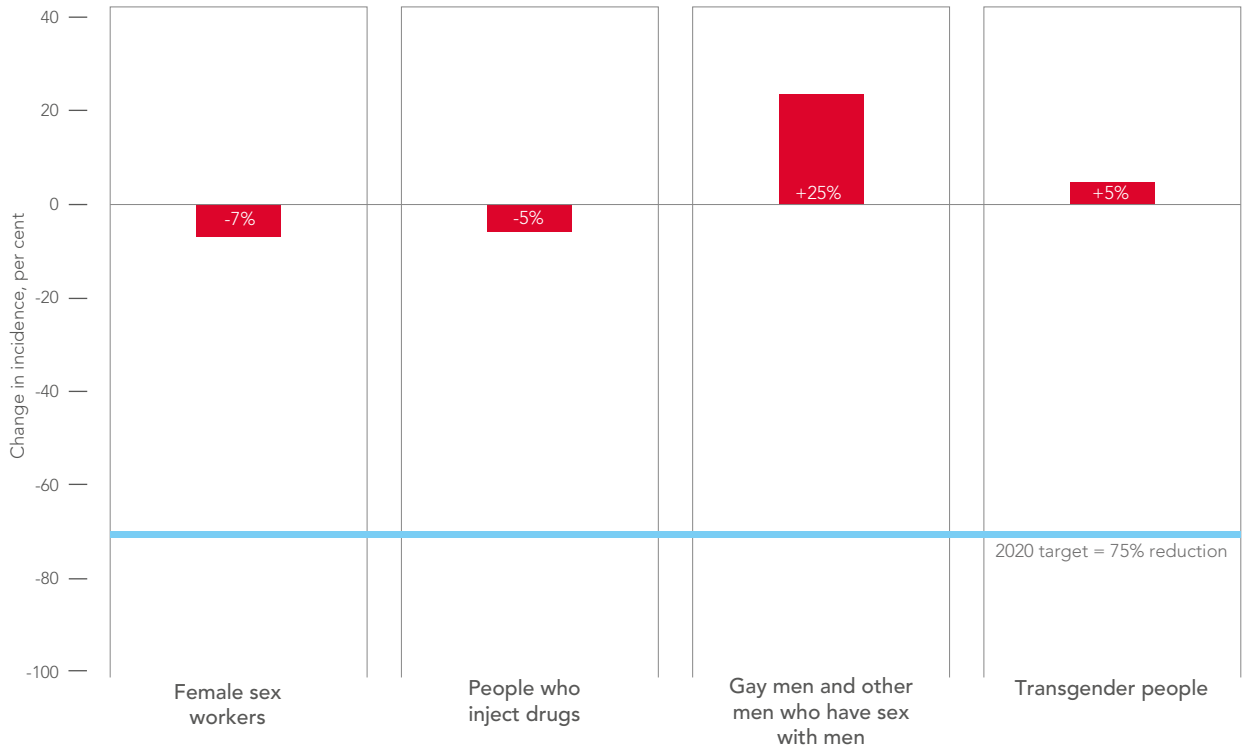
Zero new infections

A total of 23 countries had achieved reductions in new HIV infections of more than 45% by the end of 2019 and were on track to achieve a 90% reduction by 2030. Five of these countries are located in eastern and southern Africa. These success stories underscore the impact of concerted action.

Globally, however, new HIV infections declined by just 23% from 2010 to 2019. The 1.7 million [1.2 million–2.2 million] new infections that occurred in 2019 are more than three times higher than the global target of less than 500 000 new infections in 2020. The number of young women newly infected in 2019 (280 000 [160 000–420 000]) was nearly three times greater than the global target of fewer than 100 000 by 2020. There also were an estimated 150 000 [94 000–240 000] new HIV infections among children (aged 0 to 14 years) in 2019, compared to a 2020 target of less than 20 000. In addition, barely a dent has been made in the number of HIV infections among female sex workers, people who inject drugs and transgender women, and HIV infections among gay men and other men who have sex with men increased by 25% between 2010 and 2019 (Figure 7). In 2019, key populations (including gay men and other men who have sex with men, people who inject drugs, sex workers, transgender people and prisoners) and their partners accounted for 62% of all new infections worldwide, including the largest share of new infections in every region other than eastern and southern Africa.

FIGURE 7

Percentage change in HIV incidence among key populations, global, 2010–2019



Source: UNAIDS special analysis of available key population data, 2020.

Zero AIDS-related deaths

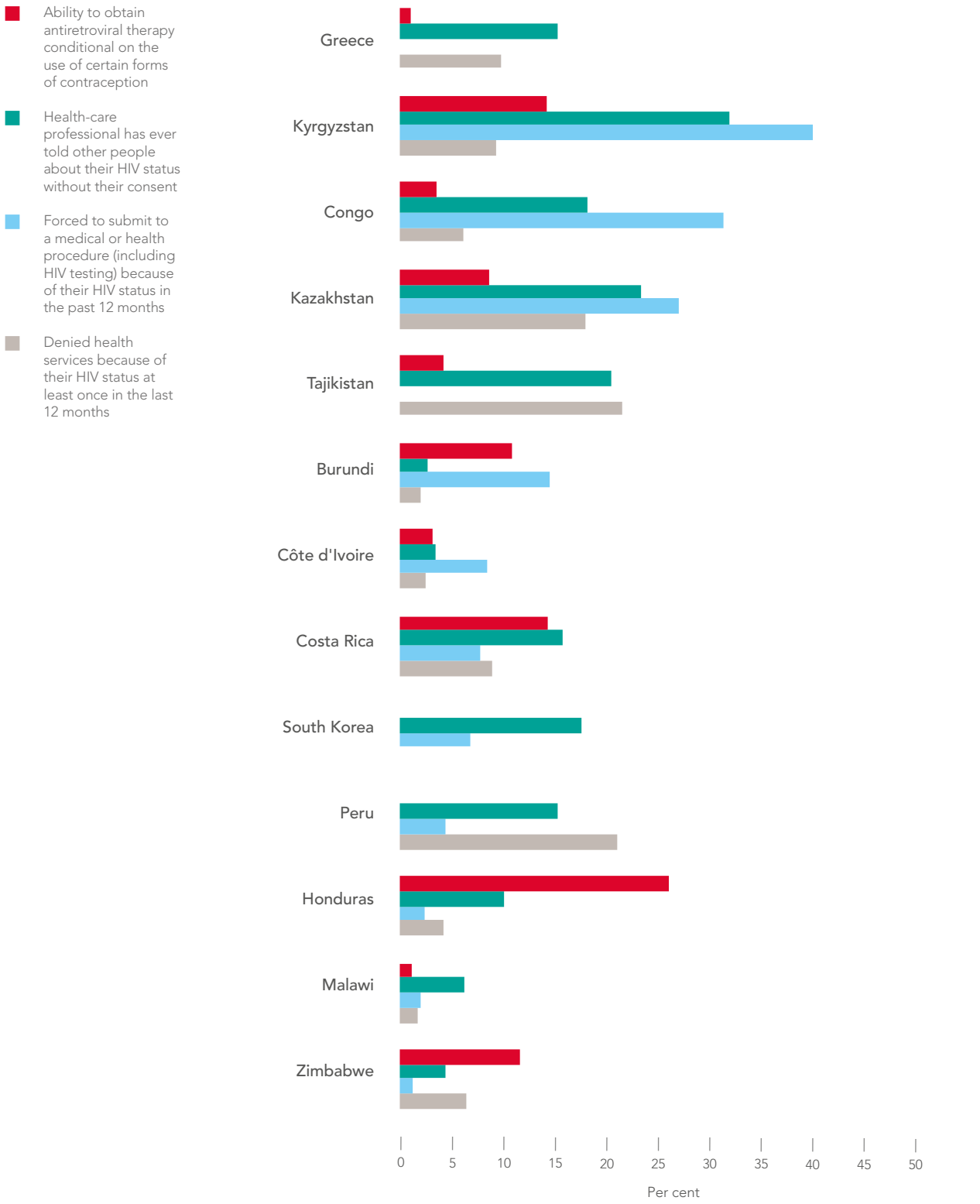
Continued, steady reductions in deaths due to AIDS-related causes represent the most promising progress achieved over the last decade. A total of 26 countries were on track to achieve a 90% reduction in AIDS-related mortality by 2030, including nine countries in eastern and southern Africa, the region where more than 55% of all people living with HIV reside. Overall, the global number of AIDS-related deaths declined by 39% from 2010 to 2019. This is progress to be proud of, but the number of AIDS-related deaths in 2019 (690 000 [500 000–970 000]) still far exceeds the 2020 target of reducing mortality to less than 500 000.

Zero discrimination

While the HIV response has made great strides in scaling up biomedical approaches, especially testing and treatment, the failure to address important societal and structural issues diminishes the reach, impact and sustainability of HIV services. Population-based surveys indicate that while discriminatory attitudes towards people living with HIV are declining in some countries, they are increasing in others, and they remain unacceptably high in all settings where surveys have been conducted. Surveys of people living with HIV in 13 countries also confirm that stigma and discrimination at health-care facilities—in the shape of denial of care, dismissive attitudes, coerced procedures or breach of confidentiality—remain disturbingly common (Figure 8).

FIGURE 8

Percent of people living with HIV who experienced different forms of discrimination in health-care settings, countries with available data, 2013–2018



Source: People Living with HIV Stigma Index surveys, 2013–2018.

While the HIV response has made great strides in scaling up biomedical approaches, especially testing and treatment, the failure to address important societal and structural issues diminishes the reach, impact and sustainability of HIV services.

FALLING SHORT OF THE FAST-TRACK TARGETS

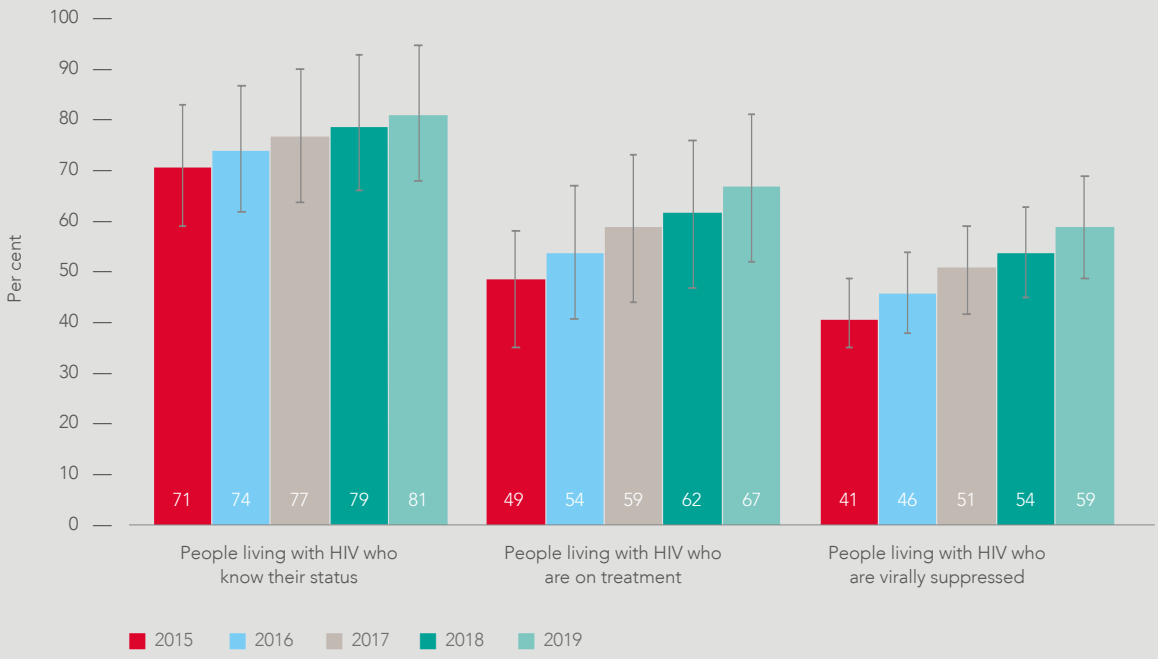
Insufficient progress towards the vision of the three zeroes stems from a global failure to stay on track to achieve any of the Fast-Track Targets for 2020.

Progress towards the 90–90–90 testing and treatment targets has been a relative bright spot. At the end of 2019, 81% of people living with HIV knew their HIV status; among those who knew their status, 82% were on treatment, and 88% of those on treatment had achieved viral suppression. However, gaps across this cascade of services combined to leave the proportion of all people living with HIV who were virally suppressed at 59% [49–69%] (Figure 9), well short of the 73% viral suppression aim of the 90–90–90 targets.

New HIV infections among children fell by more than half from 2010 to 2019, but progress on the elimination of mother-to-child HIV transmission has been slow since 2016. This is in part because of challenges related to diagnosing women who are infected in late pregnancy and during the

FIGURE 9

HIV testing and treatment cascade, global, 2015–2019



Source: UNAIDS special analysis, 2020 (see annex on methods).

breastfeeding period, and for retaining on treatment those who have been diagnosed throughout pregnancy and breastfeeding. Treatment coverage among children living with HIV (53% in 2019) has plateaued at a level well below the coverage for adults (68%).

There has been insufficient progress on combination HIV prevention among adults. An analysis by the Global HIV Prevention Coalition found that coverage in 2019 across the key pillars of combination prevention fell substantially short of the global target of 90% (Table 1). Young people's comprehensive knowledge of HIV is also markedly lower than the 90% Fast-Track target.

TABLE 1

Major gaps towards HIV prevention coverage targets (28 Global HIV Prevention Coalition countries, unless otherwise indicated), 2018–2019

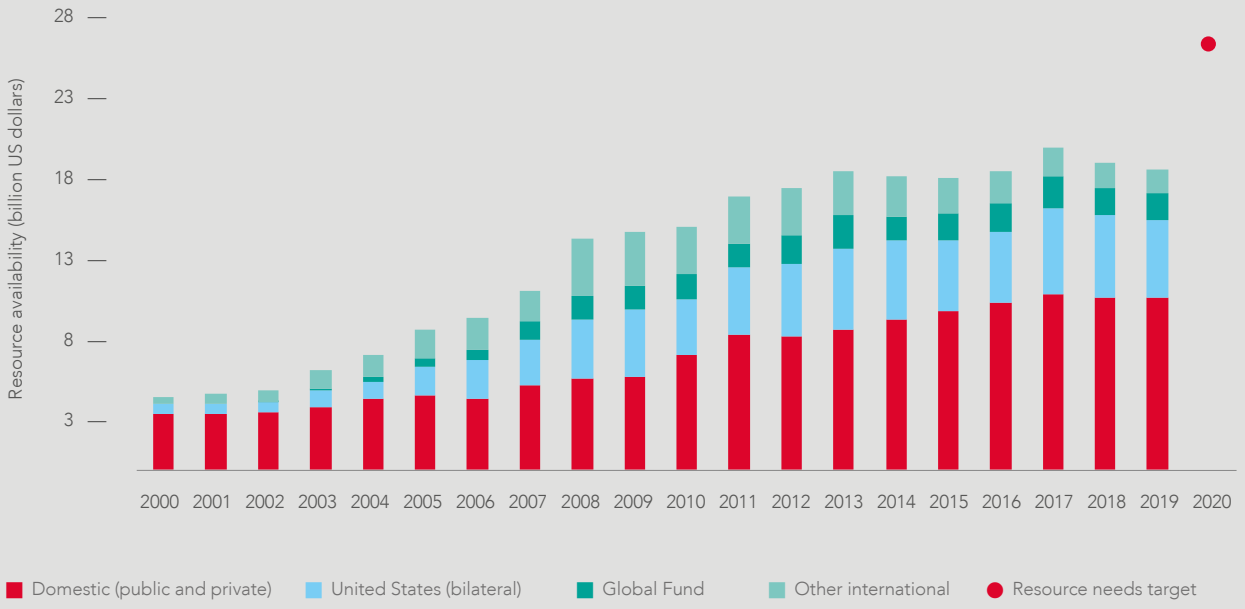
2020 commitments made by the United Nations General Assembly in 2016	Indicator (date of assessment)	Progress achieved by end-2019
90% of adolescent girls and young women in high prevalence setting have access to comprehensive prevention services	% of high-incidence locations covered with comprehensive programmes for adolescent girls and young women	31%
90% of key populations everywhere have access to comprehensive prevention services	% of key populations who reported receiving at least two prevention services in the past three months	Sex workers: 47% Gay/MSM: 33% People who inject drugs: 32%
20 billion condoms per year are made available in low- and middle-income countries	% of condom distribution need met	55%
An additional 25 million young men are voluntarily medically circumcised in 15 countries in Africa between 2016 and 2020	% of VMMC target achieved	15 million VMMCs (cumulative since 2016)
3 million people at high risk access PrEP	Number of people on PrEP (global data)	590 000

Source: Global HIV Prevention Coalition special analysis of Global AIDS Monitoring data, 2019 and 2020 (see https://aidsinfo.unaids.org/), and other programmatic data reported by countries through the Global HIV Prevention Coalition.

In 2019, US$ 18.6 billion (constant 2016 US dollars) was available for the HIV response—nearly 30% short of the US$ 26.2 billion that UNAIDS estimates is required for the global response. As in other aspects of the response, resource mobilization efforts experienced a marked loss of momentum during the Fast-Track period: total HIV resources increased by 20% from 2010 to 2015, but by only 3% from 2015 to 2019, including a 2% decrease since 2017 (Figure 10).

FIGURE 10

Resource availability and key funding sources for HIV in low- and middle-income countries, 2000–2019, with 2020 resource needs target



Source: UNAIDS financial estimates, July 2020 (see http://hivfinancial.unaids.org/hivfinancialdashboards.html).
Note: Constant 2016 US dollars.

The Fast-Track vision of transforming the societal and structural conditions that affect HIV vulnerability and service uptake also remains unattained. In 46 countries where surveys were conducted from 2014 to 2018, roughly one in five ever-married or partnered women and adolescent girls and young women had experienced physical and/or sexual violence by an intimate partner in the preceding 12 months. This vividly demonstrates the global failure to eliminate gender inequalities and end all forms of violence and discrimination against women and girls, people living with HIV and key populations by 2020.

The world also failed to reach the target of 75% of people living with, at risk of and affected by HIV benefiting from HIV-sensitive social protection. Only five of the 21 countries with a high HIV burden that have social protection strategies that specifically mention people living with HIV as key beneficiaries reported achieving coverage of at least 50% for at least one social protection benefit. Reporting from 90 countries also reveals gaps in legal aid for people who are living with and affected by HIV.

Global ambition turned to reality in some countries

Although overall progress in the response since 2015 has been discouraging, numerous countries—in diverse regions and with differing levels of economic development—have successfully accelerated their HIV responses.

In sub-Saharan Africa, both Botswana and Eswatini have achieved the 90–90–90 targets (with Eswatini exceeding the 95–95–95 benchmarks), including comparable testing cascade outcomes for both women and men. Fulfilling the principles of shared responsibility in the response, domestic resources in Botswana currently cover nearly two thirds of HIV expenditure (63% in 2017, the last year for which information is available). Zimbabwe has achieved the global target for viral suppression (73% of all people living with HIV), and new HIV infections and AIDS-related deaths declined by 44% and 61%, respectively, from 2010 to 2019. Zimbabwe has also mobilized important domestic resources through a dedicated national trust fund that helps underwrite the country's HIV treatment programme.

In Asia, Cambodia is within reach of achieving the 90–90–90 targets: it already exceeds the 73% viral suppression outcome. Thailand has also Fast-Tracked its response, reaching the 90–90–90 targets while investing in community-led services for marginalized populations. As evidence of Thailand's political commitment to the fight against HIV, domestic resources covered nearly 92% of HIV-related expenditure in 2019.

Several high-income countries are on track to end their national epidemics. In Switzerland, fewer than 500 people are newly diagnosed with HIV each year, as the country has an exceptionally high rate of viral suppression (86% [56–100%] in 2019) and rapid uptake of PrEP, especially among gay men and other men who have sex with men. In the Netherlands, 91% [82–99%] of people living with HIV were aware of their status, 85% [77–93%] of people living with HIV were on antiretroviral therapy and 83% [75–91%] were virally suppressed.

A people-centred HIV response

To get the global response back on track, lessons learned during the Fast-Track era need to be applied broadly and brought to scale. One of those lessons is the effectiveness of people-centred responses. Instead of expecting diverse people and communities to adapt to a singular approach for service delivery, providers must tailor their services to reach those who need them most. The approach is holistic, addressing the wider challenges faced by people living with HIV and individuals at higher risk of HIV infection.

Communities best understand their own needs and possess the passion and insight that drive effective advocacy, policy development and service design. They also have the motivation to ensure accountability. When communities play a leading role in the design and delivery of HIV services, those services are brought closer to those who need them, increasing convenience and minimizing transport barriers. Community leadership also helps to ensure that every individual who accesses services is welcomed, respected, served and heard.

A growing and compelling body of evidence demonstrates the effectiveness of community-led and people-centred HIV responses. Communities have served leading roles in the development, piloting and evaluation of differentiated HIV service delivery models, which have in turn had a transformative effect on the delivery of HIV treatment services, enabling programmes to tailor approaches to the needs of individuals and communities *(1–3)*.

Community organizations are ideally suited to deliver acceptable services to their peers. They play a key role in reaching marginalized populations who are often unable to access mainstream health facilities. In Kenya, for example, HOYMAS—a clinic by and for male sex workers—takes a holistic and multifaceted

approach, providing HIV prevention, treatment and care for its clients while also working to affect the societal environment through advocacy, police sensitization, paralegal training, and community mobilization and training.[1] In Bangkok, Thailand, the Tangerine Community Health Centre is managed by transgender and gender-sensitive professionals. The Centre provides holistic, gender-affirming, people-centred services to transgender women and men, a population that frequently struggles to obtain appropriate, sensitive and good-quality care *(4)*. Tangerine's community-led approach has improved the health outcomes of its transgender clients, including higher levels of HIV retesting, by providing in-demand health services beyond those for HIV, such as hormone therapy and comprehensive screening for cancer and hepatitis.

Community-led responses also help address gender inequalities and other societal and structural factors that affect HIV vulnerability and influence the reach and success of HIV responses. For example, SASA!—a community mobilization initiative that uses activism, advocacy, communication and training to change community gender norms—is associated with significant reductions in physical, sexual and emotional violence or aggression by intimate partners *(5)*.

Community-led approaches include holding service providers accountable for being people-centred, with ongoing feedback mechanisms in place to identify where and why services are falling short and how service outcomes can be improved. Community-led monitoring strengthens the evidence base on which to plan, monitor and improve HIV responses. A community-led treatment observatory established by the International Treatment Preparedness Coalition, for instance, has documented service barriers and quality issues for people living with HIV, including pregnant women, young people, gay men and other men who have sex with men, people who inject drugs and sex workers *(6)*. Similarly, the Ritshidze Project, developed by people living with HIV and their activist partners, is undertaking routine monitoring of HIV and tuberculosis services in more than 400 clinics in South Africa *(7)*. *The Global state of harm reduction* report, published since 2006, is the only independent, civil society-led monitoring of the global response to the HIV and hepatitis C epidemics among people who inject drugs, while annual reports by the International Lesbian, Gay, Bisexual, Trans and Intersex Association (ILGA) monitor the prevalence of laws that criminalize consensual same-sex sexual relations.

[1] For more information, please see: https://www.galck.org/hoymas

03

RESPONDING TO AND LEARNING FROM COVID-19

COVID-19-related restrictions have often been met with accelerated adoption of differentiated, people-centred approaches that have been proven to be more accessible and acceptable to people living with HIV and people at risk of HIV infection.

COVID-19 has imposed profound challenges on all countries and communities, including on HIV responses and the people most affected by the HIV pandemic. UNAIDS is working with countries to track trends in HIV service utilization from month to month, and these data show that disruptions in key services have occurred in many countries. Reports from civil society and other partners suggest that COVID-19-related restrictions are having a disproportionate impact on the most vulnerable, including marginalized and stigmatized communities *(8)*.

But even as COVID-19 has disrupted HIV services, the pandemic has underscored the transformative nature of HIV investments and the essential role that communities play in responding to pandemics and building sustainable socioeconomic development. The challenges created by lockdowns and other COVID-19-related restrictions have often been met with accelerated adoption of differentiated, people-centred approaches that have been proven to be more accessible and acceptable to people living with HIV and people at risk of HIV infection. In many countries, the coverage of services has quickly rebounded. While it has vividly exposed stark inequalities, COVID-19 has also pointed towards ways of making health systems and other public institutions fairer, more inclusive and better able to meet the challenges of the twenty-first century.

The impact of COVID-19 on people living with and affected by HIV

Impact on people living with HIV

As governments around the world scrambled to slow the spread of COVID-19 in early 2020 and ease the pressure on overwhelmed health systems through physical distancing requirements and lockdowns, early modelling projected that a six-month disruption of antiretroviral therapy could cause more than 500 000 [471 000–673 000] additional deaths

from AIDS-related causes, including tuberculosis, in sub-Saharan Africa in 2020–2021 *(9)*. Ensuring the continuation of treatment for people living with HIV has been included in the World Health Organization (WHO) guidelines for maintaining essential health services within the context of COVID-19, and it appears that most countries are following this advice *(10)*.

Among 25 countries reporting sufficient monthly data on treatment service utilization as of September 2020, most have shown no decline since April 2020 in the total number of people living with HIV who are receiving antiretroviral therapy. While Haiti has managed to continue expanding treatment coverage, worrisome drops in treatment utilization have been recorded in the Dominican Republic, Guyana, Peru, Sierra Leone and South Africa—the latter having the world's largest population of people living with HIV (Figure 11). The number of people on treatment in Botswana appeared stable in April through June, however the reported decline in July may reflect disruptions that occurred in previous months.

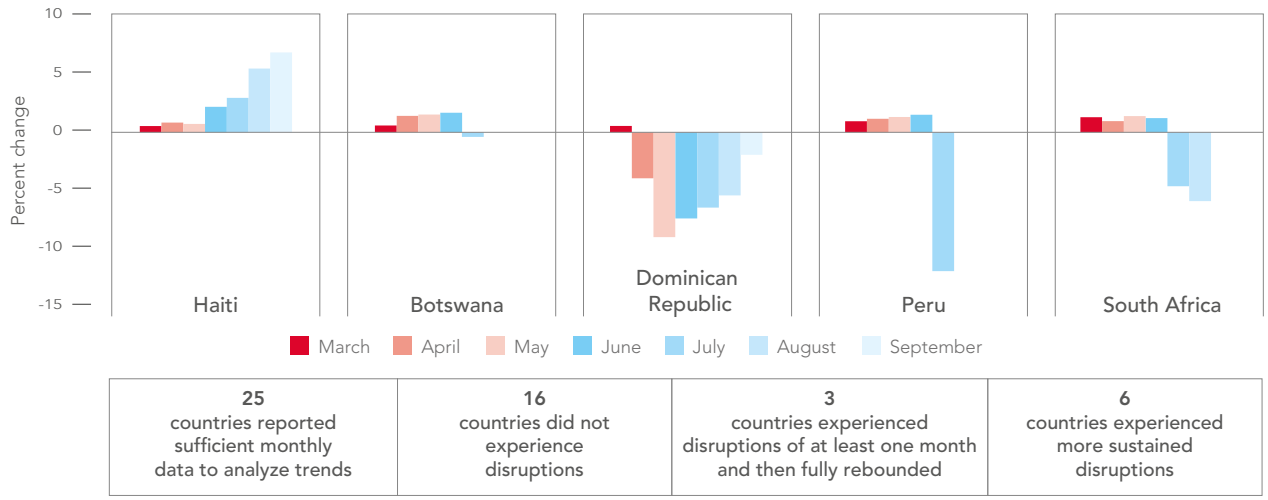
Of additional concern are the large and sustained decreases in HIV testing that have been reported in most of the 19 countries reporting sufficient monthly data. While two of those countries had rebounded to pre-COVID-19 testing levels by September, in 16 others—including eastern and southern African countries with large HIV testing programmes—the number of HIV tests being conducted remains below the levels of January and February (Figure 12).

Together with testing decreases, the COVID-19 pandemic appears to be undermining efforts to initiate newly diagnosed individuals on treatment. Declines in the number of people living with HIV who are initiating treatment have been reported by all but one of the 28 countries that have reported sufficient monthly data (Jamaica being the exception). These declines have been particularly deep and sustained in the Dominican Republic, Kyrgyzstan, Lesotho, Sierra Leone and South Africa. Only six countries had seen treatment initiations return to the same levels as in January and February, including Nigeria, which reported large increases in July, August and September (Figure 13).

Testing and treatment services for the prevention of mother-to-child HIV transmission have experienced similar disruptions. Among 13

FIGURE 11

Change in the number of people currently on antiretroviral therapy per month, compared to baseline, selected countries, 2020

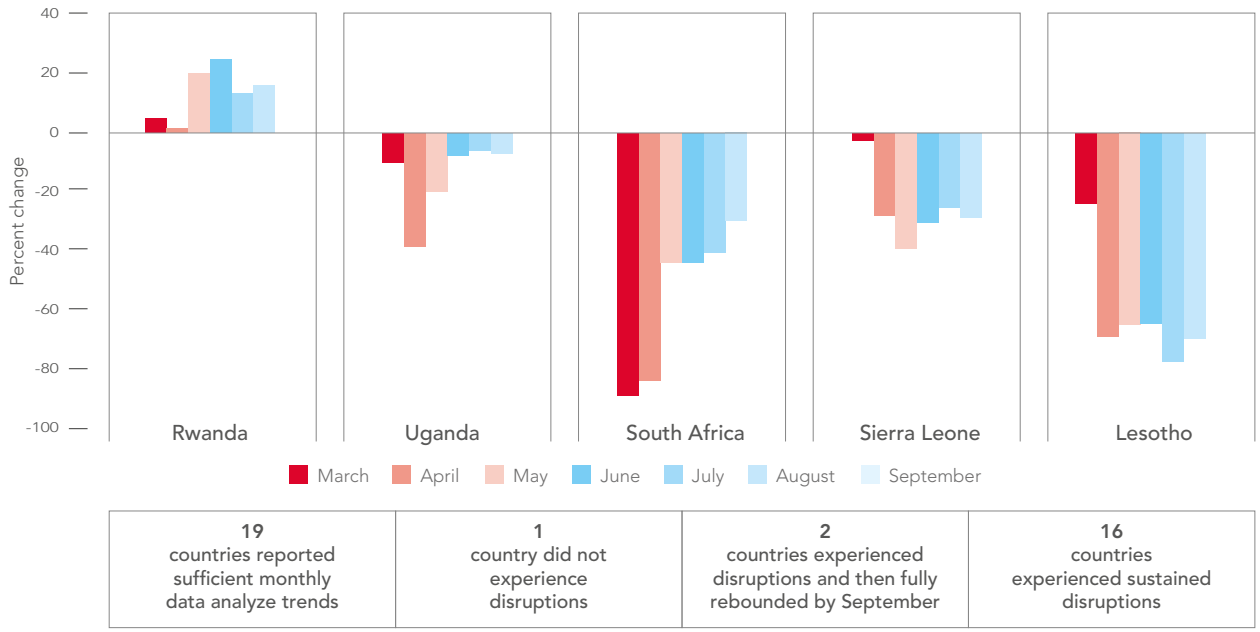


25 countries reported sufficient monthly data to analyze trends	16 countries did not experience disruptions	3 countries experienced disruptions of at least one month and then fully rebounded	6 countries experienced more sustained disruptions

Source: UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020.
Note: The baseline is the average of January and February reports.
Note: Selected countries fulfilled the following criteria: (a) provided data for January and February 2020; (b) reported on at least 50 people receiving services in January; (c) had a least 50% of facilities reporting during the month; and (d) had at least six months of data.

FIGURE 12

Change in the number of HIV tests and results returned per month, compared to baseline, selected countries, 2020

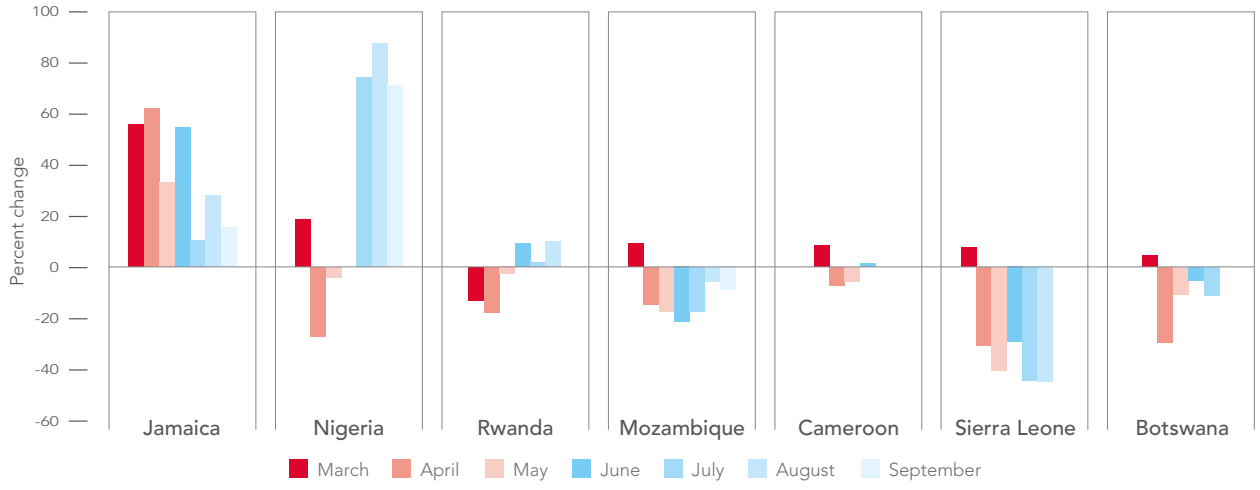


19 countries reported sufficient monthly data analyze trends	**1** country did not experience disruptions	**2** countries experienced disruptions and then fully rebounded by September	**16** countries experienced sustained disruptions

Source: UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020.
Note: The baseline is the average of January and February reports
Note: Selected countries fulfilled the following criteria: (a) provided data for January and February 2020; (b) reported on at least 50 people receiving services in January; (c) had a least 50% of facilities reporting during the month; and (d) had at least six months of data.

FIGURE 13

Change in the number of people newly initiating antiretroviral therapy per month, compared to baseline, selected countries, 2020



28 countries reported sufficient monthly data to analyze trends	**1** country did not experience disruptions	**6** countries experienced disruptions and then fully rebounded	**21** countries experienced more sustained disruptions

Source: UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020.
Note: The baseline is the average of January and February reports.
Note: Selected countries fulfilled the following criteria: (a) provided data for January and February 2020; (b) reported on at least 50 people receiving services in January; (c) had a least 50% of facilities reporting during the month; and (d) had at least six months of data.

countries that reported sufficient monthly data, six experienced decreases of 25% or greater in the number of pregnant women tested for HIV. Lesotho and Uganda are among the countries that quickly rebounded from these testing disruptions, while disruptions have been more sustained in Cambodia, Ethiopia, Kenya and South Africa (Figure 14). The number of pregnant women started on antiretroviral therapy declined by 25% or more in five of the 10 countries that reported sufficient monthly data. These declines were sharp and short-lived in Lesotho and Zimbabwe, while they extended through September in Kenya and South Africa (Figure 15).

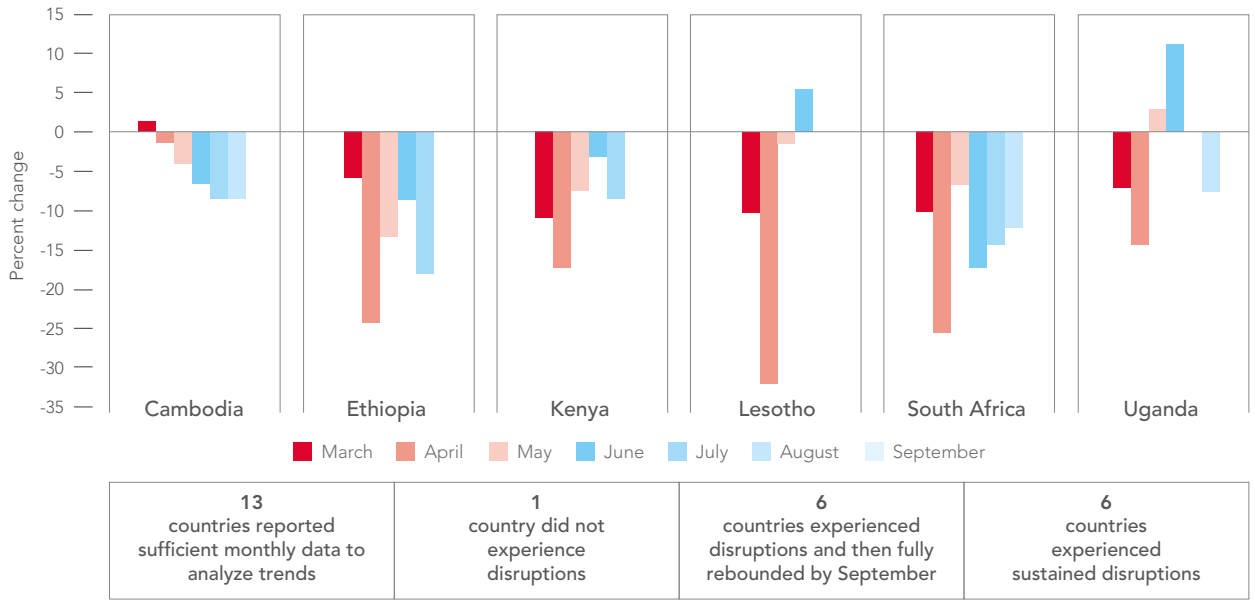
HIV testing and treatment services are further threatened by disruptions associated with COVID-19 control measures that have affected manufacturing and the transport of goods. These have the potential to generate shortages of antiretroviral medicines or to contribute to price increases for these products in the future *(11)*. A survey conducted by the European AIDS Treatment Group in 26 countries in Europe and central Asia in late April and early May 2020 found evidence of shortages of HIV medicines in seven different countries, including procurement-related shortages in the Russian Federation and Ukraine *(12)*. The survey also found that people living with HIV in at least eight countries were asked to switch treatment regimens in order to enable use of certain antiretroviral combinations to treat COVID-19.

Impact on women and girls

COVID-19 is worsening gender inequalities and gender-based violence, which in turn increase the vulnerability of women and girls to HIV *(13, 14)*. In Europe and central Asia, women are more likely than men to have lost their jobs or businesses as a result of COVID-19 *(13)*. At the same time, COVID-19 has increased women's unpaid care and domestic workload *(15)*. There are fears that the increase in unpaid household work associated with the pandemic could encourage some girls to drop out of school *(16)*. The United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) and the United Nations Development Programme (UNDP) estimate that by 2021, 47

FIGURE 14

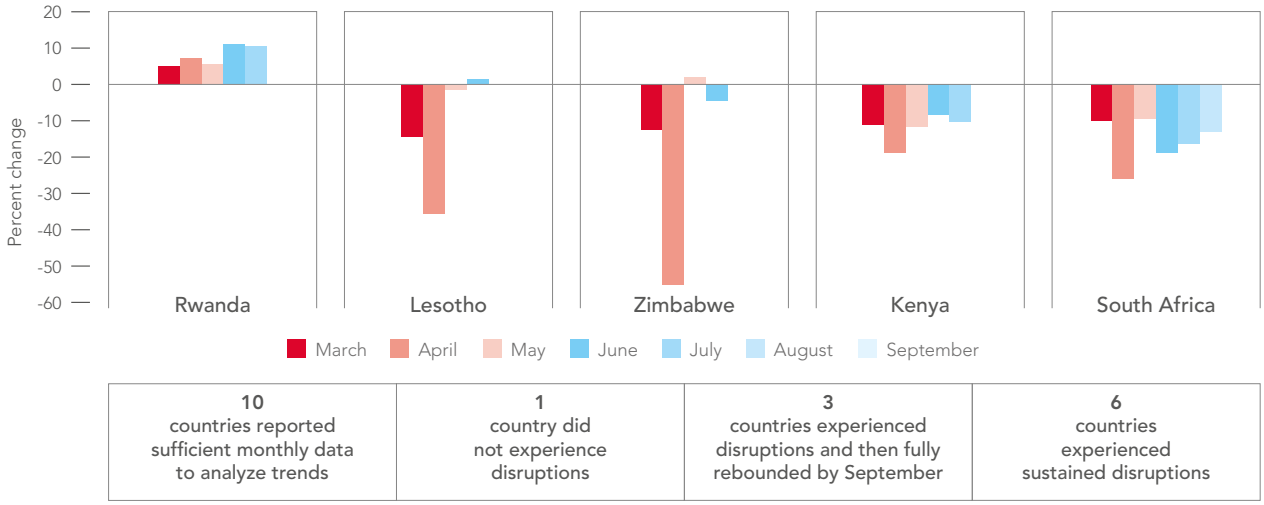
Change in the number of pregnant women tested for HIV per month, compared to baseline, selected countries, 2020



Source: UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020.
Note: The baseline is the average of January and February reports.
Note: The six countries selected were among 13 that fulfilled the following criteria: (a) had data for January 2020; (b) had more than 50 pregnant women in January data; (c) had more than 50% of facilities reporting or data from 50% of estimated births; and (d) had at least six months of data.

FIGURE 15

Change in the number of pregnant women receiving antiretroviral therapy during pregnancy per month, compared to baseline, selected countries, 2020



10	1	3	6
countries reported sufficient monthly data to analyze trends	country did not experience disruptions	countries experienced disruptions and then fully rebounded by September	countries experienced sustained disruptions

Source: UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020.
Note: The baseline is the average of January and February reports.
Note: Selected countries fulfilled the following criteria: (a) provided data for January 2020; (b) reported on at least 50 pregnant women living with HIV in January; (c) had a least 50% of facilities reporting, or data from 50% of pregnant women living with HIV; and (d) had at least six months of data.

million women and girls will have been pushed into poverty as a result of COVID-19 *(15)*.

Since the beginning of the pandemic, UN Women has documented increases in domestic violence in diverse countries and regions, with especially notable spikes occurring when stay-at-home orders have been in place *(17)*. In Kenya, for instance, monthly country reporting to UNAIDS shows that the number of people seeking services after experiencing sexual and/or gender-based violence has increased steadily since April 2020. In Asia and the Pacific, rapid assessment surveys found that civil society organizations who provide services to women victims of violence have seen increases in the number of victims reaching out for help, often with notable increases in violence perpetrated by employers and other community members *(18)*.

Health service disruptions are also having a serious impact on the health and well-being of women and girls. According to a rapid gender assessment undertaken by UN Women, at least half of women in need of family planning services experienced major difficulties in accessing them in four of 10 countries in Europe and central Asia *(15)*. Nongovernmental organizations have corroborated reports of disruptions in services for HIV, sexual and reproductive health, and social protection in eastern and southern African countries where health systems are fragile and strained, with grass-roots women and girls' organizations often filling gaps in formal services by helping to deliver antiretroviral and other medicines, sanitary pads, personal protective equipment, COVID-19 information, food, and cash support to individuals and families in need *(19)*. These COVID-19-related service gaps for women are likely to contribute to increased unintended pregnancies and poorer health outcomes among women and girls.

Impact on key populations and others at risk of HIV infection

Key populations at heightened risk of HIV infection are also disproportionately affected by COVID-19 containment measures. A UNAIDS review of experiences in 16 countries found that while sex workers were deprived of their livelihood due to lockdown measures, they were sometimes excluded from financial support measures *(8)*. This review further documented examples of violence and harassment against gay men and other men who have sex with men and transgender people.

A global survey among lesbian, gay, bisexual, transgender and intersex (LGBTI) people using a social networking app in October and November 2020 found that 20% were unable to meet their basic needs due to loss of income. Six per cent of more than 12 600 survey participants reported lower access to condoms and/or lubricant during the COVID-19 crisis, and 12% of the 1397 respondents who had ever taken PrEP were no longer using it due to COVID-19 *(20)*.

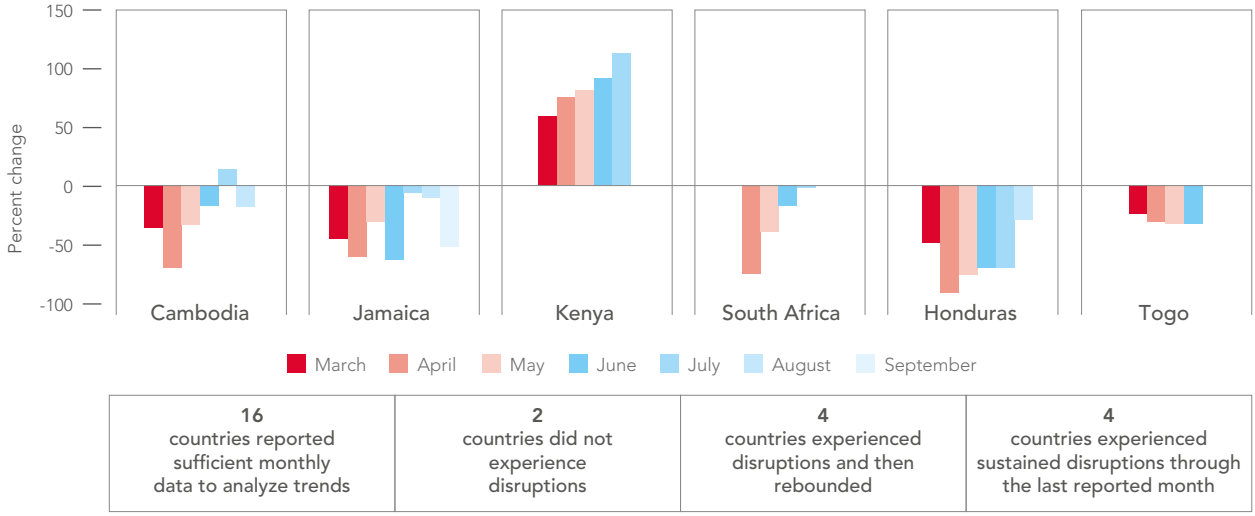
Country reports to UNAIDS show how COVID-19 responses are affecting HIV service access for key populations. Access to HIV prevention services for gay men and other men who have sex with men, for instance, was reduced in most of the 13 countries that submitted sufficient monthly data, including Cambodia, Honduras, Jamaica, South Africa and Togo (Figure 16).[2] Kenya, however, declared such services to be essential, and the number of clients accessing them reportedly increased from March to July.

A survey by the Global Network of Sex Worker Projects of 156 sex workers from 55 different countries found that a majority of respondents in every region except Europe reported reduced access to condoms, lubricants, and testing and treatment for sexually transmitted infections (STIs) *(21–25)*. Transgender people may be especially vulnerable to harms resulting from COVID-19 lockdowns. A survey of more than 1020 transgender women in six cities in the United States of America prior to the pandemic found high rates of poverty (46%), unemployment (54%), food insecurity (48%) and homelessness (13% within the previous three months) *(26)*. Although data are limited on the pandemic's impact on transgender people, concerns have been expressed regarding the economic impacts of lockdowns and potential disruptions to their access to hormone therapy and other gender-affirming care *(27)*.

Country reporting to UNAIDS suggests relatively modest effects on the utilization of harm reduction services. A notable exception is Indonesia, where service access steadily declined from March to June (Figure 17). An online survey by the International Network of People Who Use Drugs in May 2020 found that 65% of respondents reported that harm reduction services were available in their area—an encouraging sign but one that still indicates

FIGURE 16

Change in the number of gay men and other men who have sex with men reached by HIV interventions per month, compared to baseline, selected countries, 2020



Source: UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020.
Note: The baseline is the average of January and February reports.
Note: The six countries selected were among 13 that fulfilled the following criteria: (a) provided data for January 2020; (b) had no significant change in the number of facilities reporting; (c) provided monthly, not cumulative, data; and (d) had at least six months of data.

[2] Some countries, including Peru and South Africa, only reported data from a limited number of sites.

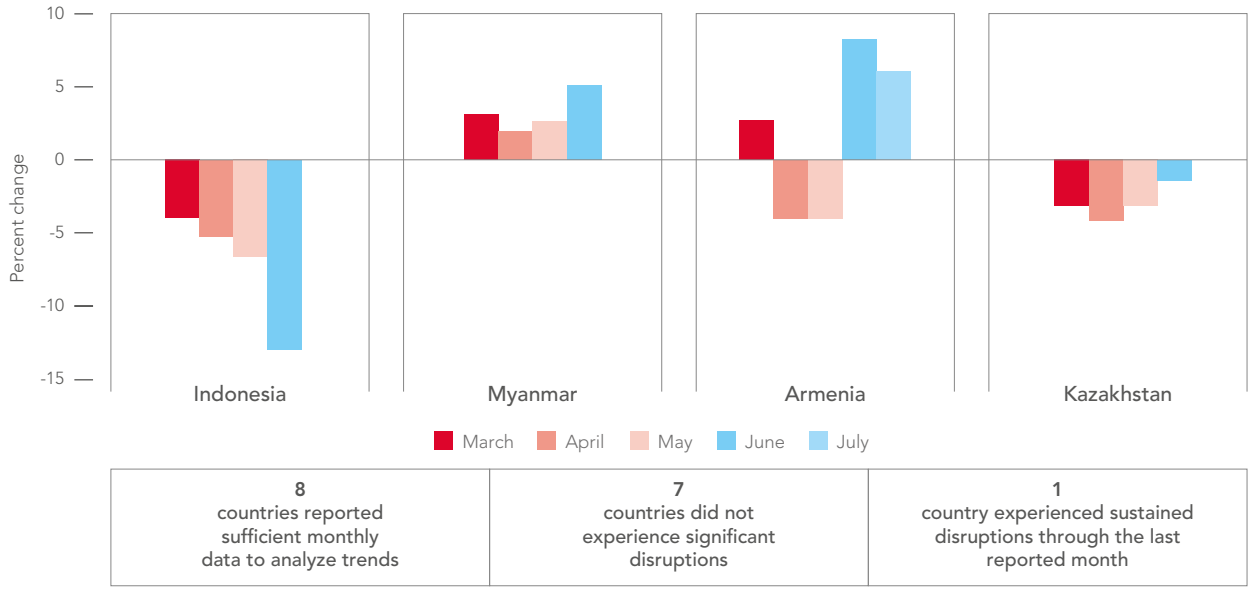
considerable room for improvement *(28)*. An acceleration of long-recommended approaches to harm reduction—such as the provision of take-home doses of opioid substitutes—appears to be in part due to efforts to adapt to lockdown conditions. According to Harm Reduction International, 47 of the 84 countries that provide opioid substitution therapy were providing expanded take-home supplies to clients in 2020, and 23 countries provided home delivery or dosing through pharmacies or outreach programmes to ensure continued access *(29)*. The Eurasian Harm Reduction Association has also documented increased provision of take-home opioid substitution therapy, provision of greater quantities of sterile injecting equipment and naloxone, greater use of online counselling and mobile outpatient services, and improved attention to the food and housing needs of clients *(30)*.

COVID-19 has also undermined access to other prevention programmes. Several priority countries for voluntary medical male circumcision (VMMC) programmes reported to UNAIDS that they had suspended their programmes between April and June as part of an effort to focus the health system on essential services, in line with WHO guidance *(31)*. In South Africa, the Centre for HIV–AIDS Prevention Studies pivoted its VMMC staff and supplies to COVID-19 screening and testing *(32)*. By late 2020, circumcision services were returning to normal in Botswana, Kenya, Rwanda and South Africa. As services resume, countries should focus efforts on males 15 years and older to maximize the HIV prevention impact *(33)*.

Among 12 countries reporting monthly data to UNAIDS on the number of male and female condoms that left warehouses for onward distribution, trends in four countries indicate there were COVID-19-related service disruptions for condom programming. Eight countries, however, report stable or increasing trends in condom distribution since January. Similarly, among the eight countries that reported sufficient monthly data to UNAIDS on the number of first-time users of PrEP, six experienced short-term disruptions and then recovered, one (Cambodia) had steady scale-up with no disruptions, and one (Lesotho) experienced steady disruptions from April through September.

FIGURE 17

Change in the number of people who inject drugs receiving opioid substitution therapy per month, compared to baseline, selected countries, 2020



Source: UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020.
Note: The baseline is the average of January and February reports.
Note: Selected countries fulfilled the following criteria: (a) provided data for January 2020; (b) had no significant change in the number of facilities reporting; (c) provided monthly, not cumulative, data; and (d) had at least six months of data.

COVID-19 AND SEXUAL BEHAVIOUR

While the impact of COVID-19 on HIV services is clear, there is less understanding about its effect on sexual behaviour and rates of sexual transmission of HIV.

In the United Kingdom of Great Britain and Northern Ireland, where COVID-19 restrictions discourage sexual intercourse with a casual partner, most of the 1386 gay and bisexual men surveyed between 17 April and 8 May reported abstaining from casual sex during the lockdown, with 57% anticipating that their avoidance of casual sex would last at least six months *(34)*.

In New York City, health authorities issued guidelines on reducing the risks of coronavirus transmission during sexual intercourse that advised against sex with casual partners *(35)*. Switzerland was among the many countries that closed brothels during a lockdown, and when they re-opened, restrictions were put in place to reduce the risk of COVID-19 infections *(36)*. The Global Network of Sex Work Projects surveyed its members in 55 countries and found that COVID-19 restrictions constricted sex work, leading to sex workers experiencing severe loss of income, increased discrimination and harassment, and hunger *(37)*.

These actions may point to the potential of lower rates of HIV transmission in 2020. However, there is also evidence of people engaging in higher risk sexual behaviours as they seek to relieve loneliness and stress during the pandemic. In the above-noted survey of gay and bisexual men in the United Kingdom, 24% reported having had casual sex during the lockdown, with 5% reporting having had more than five casual partners *(34)*.

Tracking diagnoses of STIs that present symptoms more quickly than HIV can be used to estimate changes in sexual risk behaviour. However, the COVID-19 pandemic has made it challenging to interpret STI trends. Declines in STI diagnoses have been reported in some jurisdictions, for instance, but they may stem from disruptions in STI services or the desire of people to avoid health-care services of all kinds during the pandemic *(38)*. Thus, rather than heralding good news, drops in STI diagnoses may indicate that many STIs are going undiagnosed and untreated.

In some low- and middle-income countries, health officials are bracing for a surge in new births due to interruptions to contraceptive access during the pandemic *(39)*. In India, for example, it is estimated that COVID-19 interrupted contraceptive access for more than 25 million couples *(40)*. By contrast, COVID-19 could lead to a so-called baby bust in high-income countries with greater contraceptive access, as women decide to avoid having children during the pandemic and the associated economic recession. One analysis projected a reduction in the number of births of 300 000 to 500 000 in the United States alone as a result of COVID-19 *(41)*.

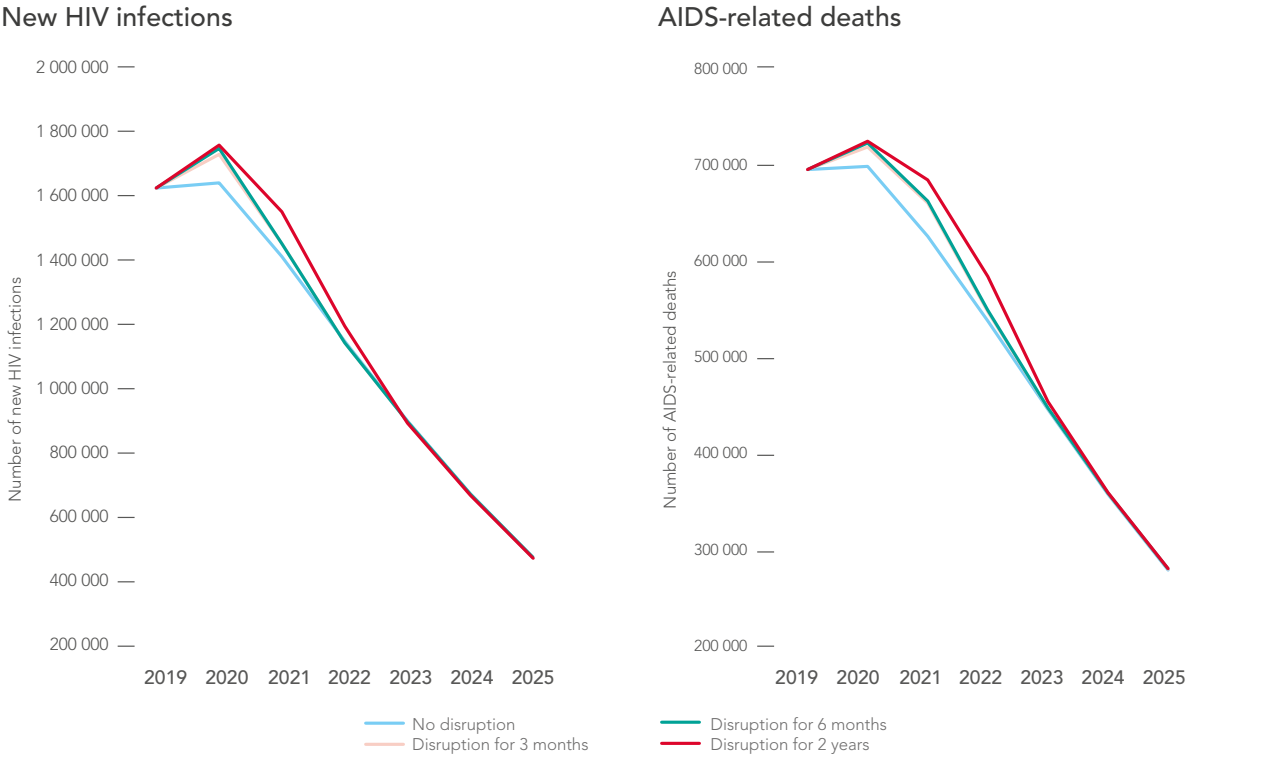
To obtain a clearer picture of the pandemic's impact on sexual behaviours, a number of studies are planned in both high and low HIV prevalence settings.

Modelling and projecting the impact of COVID-19 on the HIV response

The data reported to UNAIDS by countries thus far have been used to project the potential long-term impact of the COVID-19 pandemic on the HIV response. Several scenarios with different durations of service disruptions have been modelled. An important assumption across all the scenarios is that the current research pipeline will generate one or more safe and effective COVID-19 vaccines, and that the world will succeed in rolling out vaccines globally. Nonetheless, these projections warn that COVID-19-related disruptions may result in 123 000 to 293 000 additional HIV infections and 69 000 to 148 000 additional AIDS-related deaths globally. More positively, these projections show that broad-scale vaccination should allow HIV services to rebound quickly and return to normal, making the COVID-19 pandemic's effects on the HIV response relatively short-lived (Figure 18). Using these projections, UNAIDS and its partners have concluded that the COVID-19 pandemic should not be a reason for adopting lower HIV response targets for 2025 or for delaying the 2030 deadline for ending AIDS as a public health threat.

FIGURE 18

Modelled projection of new HIV infections and AIDS-related deaths in three different scenarios of disruption associated with the COVID-19 pandemic, global, 2019–2025



	Additional new HIV infections	Additional AIDS-related deaths
Three-month disruption	123 000	69 000
Six-month disruption	142 000	79 000
Two-year disruption	293 000	148 000

Source: Special analysis by Avenir Health using data from UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020 and UNAIDS epidemiological estimates, 2020 (https://aidsinfo.unaids.org/). See annex on methods,
Note: Several scenarios with different disruption durations (3 months, 6 months and 2 years) have been modelled. Based on a UNAIDS review of the impact of COVID-19 on HIV services, we assumed that during a disruption: (a) the rate of increase in antiretroviral therapy coverage would be half the pre-COVID-19 rate; (b) there would be no VMMC; (c) 20% of the population would experience a complete disruption of services to prevent vertical transmission; and (d) there would be no PrEP scale-up.

Mitigating the impact of COVID-19 through differentiated service delivery

COVID-19 has catalysed the accelerated implementation of innovations that pre-date the pandemic but that have previously struggled to obtain traction. For example, a number of countries—including Burundi, Eswatini, Guatemala and Myanmar—have expanded HIV self-testing as an alternative to facility-based testing. In response to mandatory stay-at-home orders in Poland, Project Test began offering HIV counselling by phone, followed by mail delivery of a testing kit, free of charge *(42)*.

In addition to differentiated testing services, differentiated methods of treatment service delivery have also proven essential to maintaining service access during the pandemic. Communities have played a critical role in the scale-up of differentiated service approaches, delivering medicines to the homes of people living with HIV in such diverse locales as Nepal, the Republic of Moldova and Sierra Leone. A UNAIDS survey of 225 community-led organizations from 73 countries found that community groups moved swiftly in response to the pandemic to maintain service access, including using telephone or email for personal counselling and for monitoring treatment and health status.

Multimonth dispensing of antiretroviral medicines to people living with HIV has been critical to easing the impact of lockdowns. Although WHO first recommended shifting to multimonth prescriptions and antiretroviral medicine dispensing in 2016, adoption of the approach was slow prior to the COVID-19 pandemic, partly due to challenges related to adapting procurement and supply management systems. In response to COVID-19, however, a number of countries that had previously adopted the WHO recommendation accelerated implementation of multimonth dispensing, including Malawi, Thailand, the United Republic of Tanzania, Viet Nam and Zimbabwe. Other countries have temporarily adopted more liberal dispensing policies for people who are stable on HIV treatment, including Burundi, the Dominican Republic, Ethiopia, Mozambique, Papua New Guinea and South Africa. UNAIDS analysis of treatment data in 46 countries found that by mid-2020, accelerated implementation of multimonth dispensing had reduced the number of clinic visits by more than half.

LOVE ON WHEELS

Electric bicycles are being used in the Philippines to ensure continuity of HIV services to key populations during the COVID-19 pandemic. The Love on Wheels initiative was launched by the nongovernmental organization Project Red Ribbon, in partnership with the Manila Social Hygiene Clinic and Treatment Hub at the Manila Social Hygiene Clinic, and in collaboration with UNAIDS and the Department of Health–Metro Manila Center for Health and Development. Project Red Ribbon mobilized resources to buy e-bikes and other bicycles, which they then donated to the Manila Social Hygiene Clinic to provide mobile HIV services to hard-to-reach key populations *(43)*.

The HIV response clearly demonstrates the importance of engaging affected communities at all stages of public health responses, combating all forms of stigma and discrimination, supporting and protecting health-care workers, and ensuring free and affordable access to diagnostic, preventive and therapeutic tools, with particular attention to the needs of the most vulnerable and hardest to reach. In addition to preserving health services, responses must address other factors that affect health and service utilization, including employment, misinformation and a lack of sanitation tools and infrastructure. Restrictions to protect public health must be time-limited, proportionate, necessary and evidence-informed. The HIV response underscores the critical value of international solidarity, including the need for countries to support each other to ensure that no country is left behind.

PRESERVING HIV TREATMENT ACCESS DURING THE COVID-19 PANDEMIC IN THE UNITED REPUBLIC OF TANZANIA

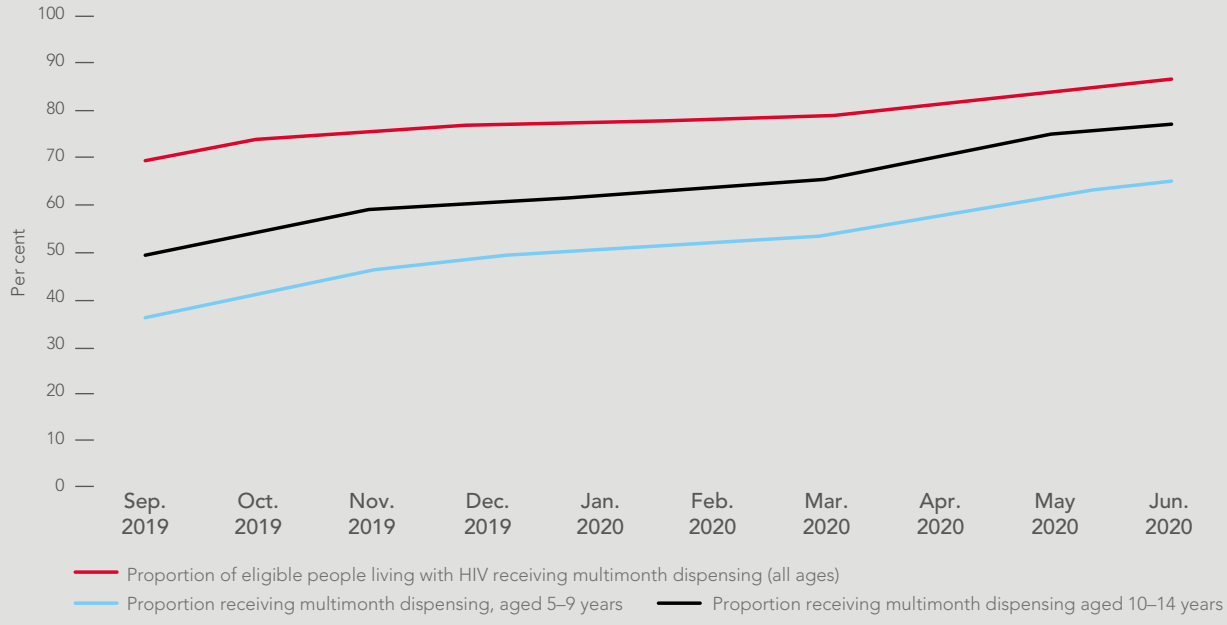
As COVID-19 hit the United Republic of Tanzania, swift actions by the Ministry of Health, Community Development, Gender, Elderly and Children and its partners maintained essential HIV services and minimized the impact of the COVID-19 outbreak on the HIV response on the Tanzania mainland.

A ministry-led task force was established to coordinate key stakeholders and communicate scientific and programmatic guidance to health facilities. Selected indicators were regularly reported against to monitor closely the impact of COVID-19 on HIV services. As learning accumulated, information on innovative approaches and good practices was disseminated to health facilities for adoption.

Maintaining treatment access has been a priority. National health authorities and partners moved quickly to expand multimonth dispensing of three or six months of antiretroviral medicines to people living with HIV. Scale-up of multimonth dispensing—including community-level dispensing using mobile clinics and motorbikes—accelerated between February 2020 and June 2020 (Figure 19) *(44)*.

FIGURE 19

Scale-up of 3-month dispensing of HIV antiretroviral therapy, all ages and children, mainland Tanzania, 2019–2020

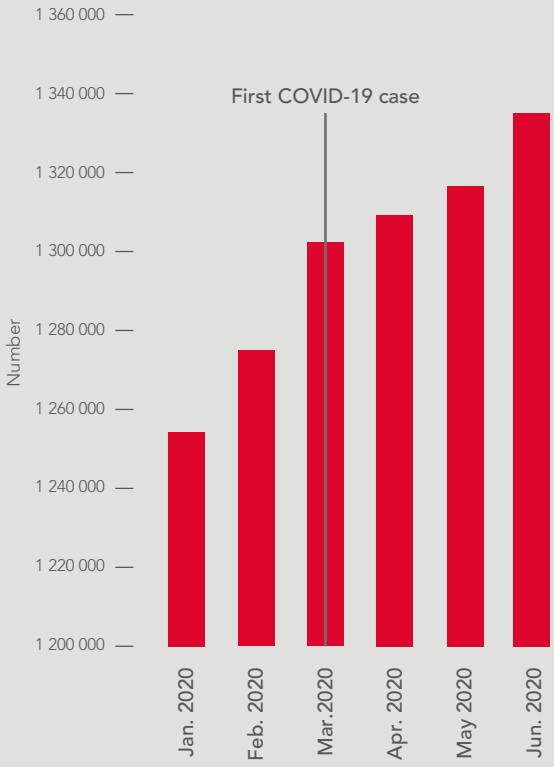


Source: PEPFAR Tanzania FY 20 Q3 POART. PEPFAR Implementing Partner meeting. PEPFAR; 22 October 2020.

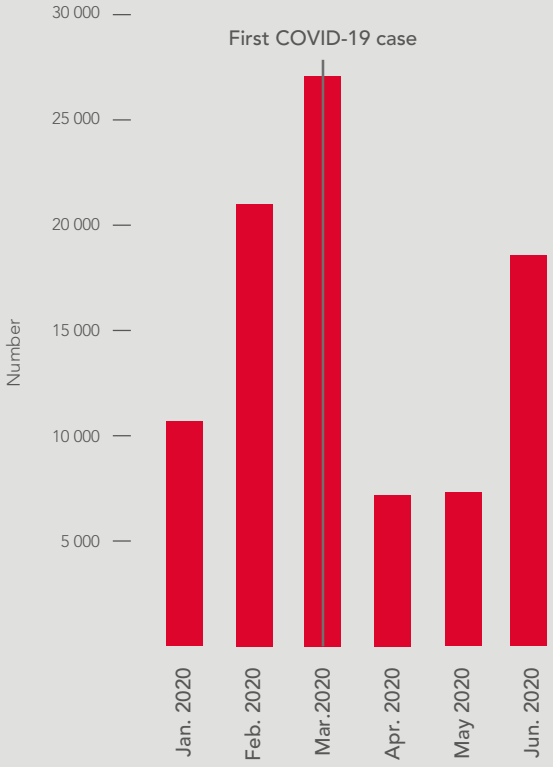
Despite the many challenges created by COVID-19, these measures helped maintain the percentage of people living with HIV retained in care over a 12-month period at more than 90%, similar to the previous two quarters *(44)*. The number of new HIV diagnoses and people who initiated antiretroviral therapy each month dipped, but it was beginning to bounce back by June 2020. Growth in the number of people on antiretroviral therapy, however, has been sustained throughout the COVID-19 pandemic (Figure 20).

FIGURE 20

Number of people receiving antiretroviral therapy by month, all ages, mainland Tanzania, January–June 2020



Net increase in the number of people receiving antiretroviral therapy by month, all ages, mainland Tanzania, January–June 2020



Source: PEPFAR Tanzania FY 20 Q3 POART. PEPFAR Implementing Partner meeting. PEPFAR; 22 October 2020.

Mobilization of the HIV response to fight COVID-19

As the novel coronavirus began to spread around the world, international and national mechanisms initially established for the HIV pandemic response were mobilized against COVID-19. The Global Fund has made more than US$ 1 billion available to countries to strengthen COVID-19 responses and to mitigate the pandemic's impact on programmes for HIV, tuberculosis and malaria. The African Union and the Africa Centres for Disease Control and Prevention's new PACT (Partnership to Accelerate COVID-19 Testing in Africa) is working with UNAIDS to leverage the community links of the HIV response in order to support diagnosis and contract tracing for COVID-19.

Leadership from national HIV responses is playing an active role in national COVID-19 responses. This has included deploying HIV programme directors to lead major elements of the COVID-19 response, and repurposing HIV facilities for the management of COVID-19 cases. Laboratory systems that were strengthened to diagnose and manage the treatment of people living with HIV, tuberculosis and hepatitis have proven invaluable to the COVID-19 response.

Communities that are central players in the HIV response also have stepped up to address COVID-19. Community organizations surveyed by UNAIDS in 2020 reported delivering masks, soap and sanitizer in their communities, and some reported intensifying efforts to address societal effects of the pandemic, including gender-based violence and food insecurity. In South Africa, 28 000 HIV community health workers have provided COVID-19 symptom screening and testing referral in 993 high-density communities *(45)*. Although some community organizations reported success in mobilizing financial resources for COVID-19-related work, others said they were struggling to handle the additional responsibilities. Community groups report continuing difficulties in obtaining sufficient personal protective equipment for their staff.

Community-led responses to COVID-19: a sound investment

The *UN framework for the immediate socio-economic response to COVID-19* states that "communities will bear the brunt of the socio-economic impact of COVID-19. They also hold the key to flatten the curve, respond to the pandemic and ensure longer-term recovery. They will need investment" *(46)*.

UNAIDS has estimated the investments that are required for a comprehensive, community-led response to COVID-19 in high-density settings, such as the informal settlements that are home to more than 1.5 billion people, as well as temporary camps for refugees and internally displaced people. The service package includes the following:

- A needs assessment of the local community.
- Activities to prevent transmission (including reducing secondary infections among close contacts and care providers).
- Detection, isolation and treatment of cases (including community treatment for mild and asymptomatic cases and transport to health facilities for more serious cases).
- Communication of accurate information by trusted community leaders.
- Efforts to promote the resilience and sustainability of community responses.

UNAIDS estimates that this two-year programme would cost US$ 6.08 per person per month (not including indirect costs, which are estimated at an additional 2–20%), with most costs supporting the prevention of infections and the management of mild and moderate cases. At an annual cost of US$ 81 per person, this community-centred approach is far cheaper than the annual cost of treating a case of COVID-19.

The importance of robust public health systems

The experience with COVID-19 underscores the importance of a well-functioning, well-resourced, agile and resilient health system, with the ability to track cases and deaths in real time, quickly respond to fluctuations in demand and deliver reliable, consistent health advice and people-centred services. Where countries have mobilized a rapid and science-driven public health response—such as in Japan, New Zealand and Viet Nam—transmission has been brought under control and a measure of normalcy has returned to public life *(47)*.

More commonly, however, COVID-19 has exposed the extraordinary human and economic costs of under-investing in health. In countries where health access is not universally guaranteed, the pandemic has worsened underlying health inequities and contributed to needless death and suffering *(48)*. A long-term legacy of the collective fight against COVID-19 should be accelerated action to make universal health coverage a global reality.

COVID-19 also highlights the need for robust, sustained investments in the global health architecture, which has, despite funding limitations, proven its value during this global health emergency. WHO has alerted the global community to the course of the pandemic's spread, providing essential scientific advice and guidance on diagnostics, treatments and disease control measures. It has also worked with stakeholders to strengthen essential technologies and systems. The Global Fund has provided essential funding to support COVID-19 responses in low- and middle-income countries. Gavi, the Vaccine Alliance, is working to prevent the interruption of immunization efforts during the pandemic and to support national efforts to respond to COVID-19. UNAIDS has stepped forward to ensure that COVID-19 responses incorporate the lessons learned from the HIV response. To expedite availability and uptake of COVID-19 commodities, UNAIDS recommends that countries do the following:

- Improve the accuracy of their demand forecasting.
- Take regulatory action to expedite the export and/or import of health commodities.
- Consider tax waivers to mitigate potential increases in the prices of antiretroviral medicines and other health commodities.
- Ensure transparent and timely communication between countries, buyers and suppliers.
- Strengthen in-country distribution and supply chain management systems.

A CONCERTED CALL FOR A PEOPLE'S VACCINE

Recognizing that the world's best chance to stay safe from COVID-19 lies in vaccines and treatments that are available for all, UNAIDS has joined with Oxfam and other partners in a global movement for a People's Vaccine. Supported by humanitarian health organizations, past and present world leaders, health experts, faith leaders and economists, the movement for a People's Vaccine aims to prevent monopolies on vaccine and treatment production by making funding for research and development conditional on the agreement of research institutions and pharmaceutical companies to share freely all information, data, biological material, know-how and intellectual property.

Pricing should be transparent and geared solely to the cost of research, development and manufacturing. Vaccines should be equitably shared around the world, in part through the donation of doses secured by rich countries to the COVAX initiative coordinated by WHO, Gavi and the Coalition for Epidemic Preparedness. Vaccines should be provided free of charge to all people, and all decision-making related to COVID-19 vaccination should ensure the full participation of governments in developing countries and civil society. The WHO COVID-19 Technology Access Pool is facilitating the sharing of knowledge, intellectual property and data to strengthen collective efforts to advance science, technology development and broad sharing of the benefits of scientific advancement and its applications based on the right to health *(49)*.

04

2025 AIDS TARGETS

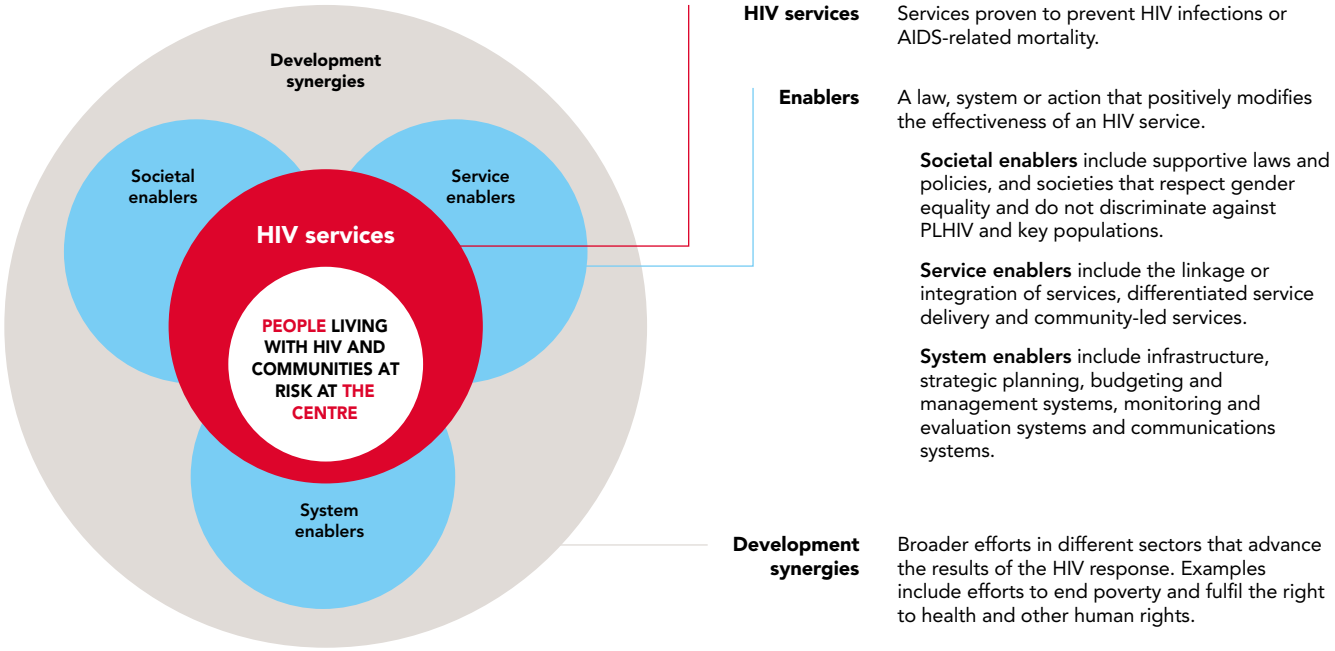
People living with HIV and communities at risk have been placed at the centre of the proposed targets for 2025.

As the Fast-Track era draws to a close, a global effort to plot the future course of the HIV response has developed a set of interim targets for 2025 that aim to refocus the world on the 2030 HIV target within the SDGs. Involving a broad array of stakeholders over more than two years, the target-setting process documented the gaps and challenges that have resulted in the world falling short of its 2020 targets. The process also included an extensive review of available evidence on the approaches that have effectively reduced HIV infections and AIDS-related morbidity and mortality.

The investment framework that has served as the basis for the development of evidence-informed HIV responses for nearly 10 years was adapted to serve as a framework for the 2025 targets (Figure 21). At the centre of this framework are the people living with HIV and communities at risk who require a comprehensive set of services to prevent HIV infections, diagnose new HIV infections and treat those living with HIV. The mixture of services needed differs from subpopulation to subpopulation.

FIGURE 21

Investment framework for the development of the 2025 AIDS targets



Experience has shown that merely providing these HIV services is insufficient for reaching the levels of coverage required to control national and subnational epidemics. There is a growing body of evidence showing that high coverage and full impact requires three critical enablers:

Societal enablers: enabling laws, policies and public education campaigns that dispel the stigma and discrimination that still surround HIV, empower women and girls to claim their sexual and reproductive health rights, and end the marginalization of people at higher risk of HIV infection. Includes anti-stigma training for health-care workers and police.

Service enablers: strategies that draw individuals in for services or bring those services to the people who need them. These enablers include the linkage or integration of services, differentiated service delivery and community-led services.

System enablers: the infrastructure and systems that are critical to delivering services efficiently, including facilities, equipment and systems for strategic planning, budgeting, human resources management, monitoring and evaluation, and communications.

The 2025 targets place far greater emphasis on removing societal and legal impediments to service delivery, and on linking or integrating the provision of HIV services with other services that people living with HIV and communities at risk need to stay healthy and build sustainable livelihoods. Achieving the targets for societal enablers and integrated service delivery are critical to achieving the high coverage called for within the HIV service targets.

TABLE 2

Top-line targets for 2025

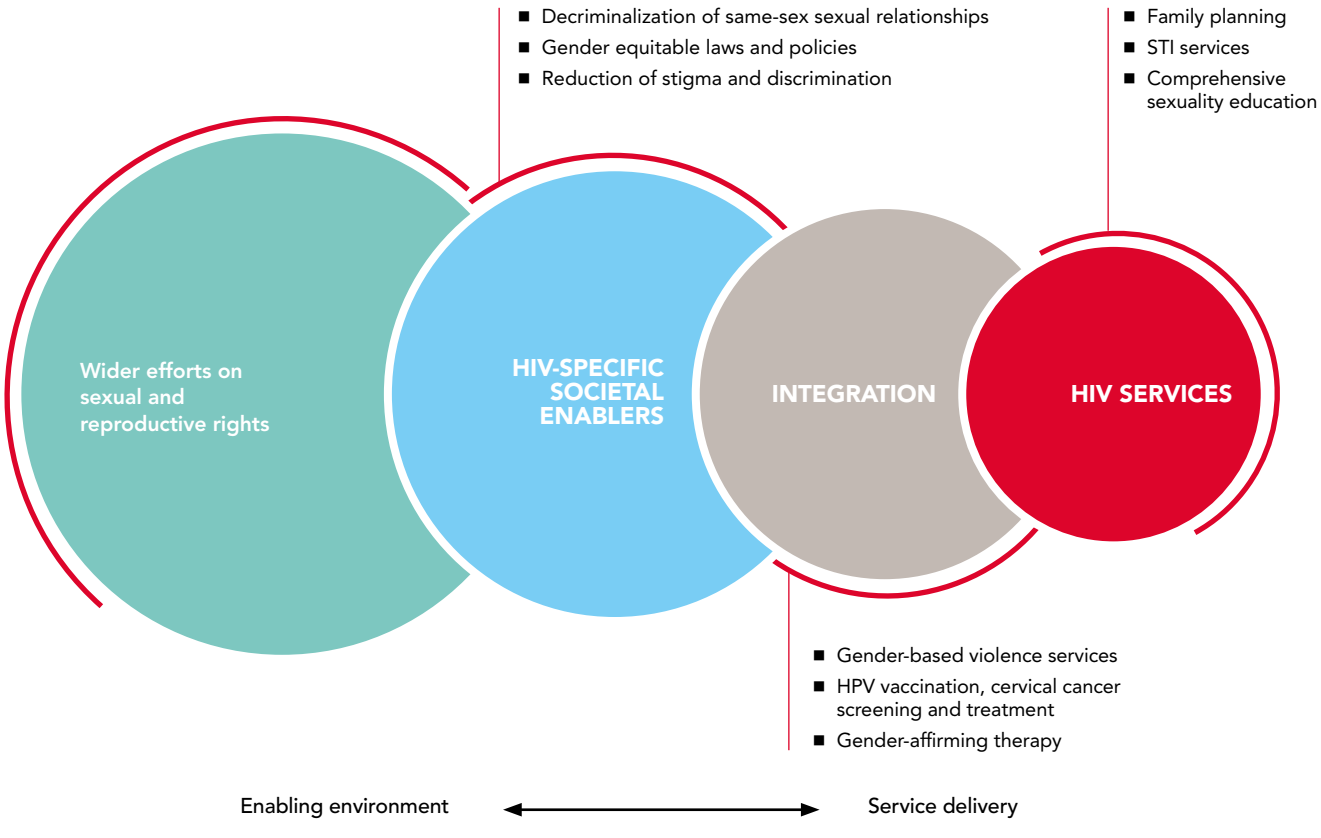
<table>
<tr><th colspan="3">HIV services</th><th>Integration</th><th colspan="3">Societal enablers</th></tr>
<tr><td rowspan="3">95–95–95 testing and treatment targets achieved within all subpopulations and age groups.</td><td rowspan="3">95% of women of reproductive age have their HIV and sexual and reproductive health service needs met; 95% of pregnant and breastfeeding women living with HIV have suppressed viral loads; and 95% of HIV-exposed children are tested by 2025.</td><td rowspan="3">95% of people at risk of HIV infection use appropriate, prioritized, person-centred and effective combination prevention options.</td><td rowspan="3">Adoption of people-centred and context-specific integrated approaches that support the achievement of the 2025 HIV targets and result in at least 90% of people living with HIV and individuals at heightened risk of HIV infection linked to services for other communicable diseases, non-communicable diseases, sexual and gender-based violence, mental health and other services they need for their overall health and well-being.</td><td colspan="3">10–10–10 targets for removing societal and legal impediments to an enabling environment that limit access or utilization of HIV services.</td></tr>
<tr><td>Less than 10% of countries have punitive legal and policy environments that deny or limit access to services.</td><td>Less than 10% of people living with HIV and key populations experience stigma and discrimination.</td><td>Less than 10% of women, girls, people living with HIV and key populations experience gender inequality and violence.</td></tr>
<tr><td colspan="3">Achieve SDG targets critical to the HIV response (i.e., 1, 2, 3, 4, 5, 8, 10, 11, 16 and 17) by 2030.</td></tr>
</table>

The investment framework and 2025 targets also recognize that the HIV response sits within a wider effort to end poverty, fulfil the right to health and other human rights, and reach the other goals within the 2030 Agenda for Sustainable Development. Frameworks and concepts for the achievement of the SDGs cut across the 2025 targets. For example, sexual and reproductive health and rights are central to empowering women and adolescent girls, fulfilling their human rights, ensuring their health and well-being, and creating gender-equal societies and economies. Investments in sexual and reproductive health and rights yield enormous social and economic returns for women in all of their diversity, and for their families and societies, paying dividends across generations *(50)*. They also are critical to the HIV response, and elements of sexual and reproductive health and rights appear within the HIV service targets, the integration targets and the societal enabler targets (Figure 22).

Modelling has been undertaken to project the impact that achievement of these targets would have on the epidemic's trajectory, achieving steep reductions to about 370 000 HIV infections and 250 000 AIDS-related deaths in 2025, and putting the world firmly on track to the ultimate goal of ending the epidemic in all settings and for all populations by 2030 (see Figure 2 on page 9). UNAIDS and its partners are currently working to estimate the financial resources that will be needed to ensure that these targets are achieved.

FIGURE 22

Sexual and reproductive health and rights within the 2025 AIDS targets



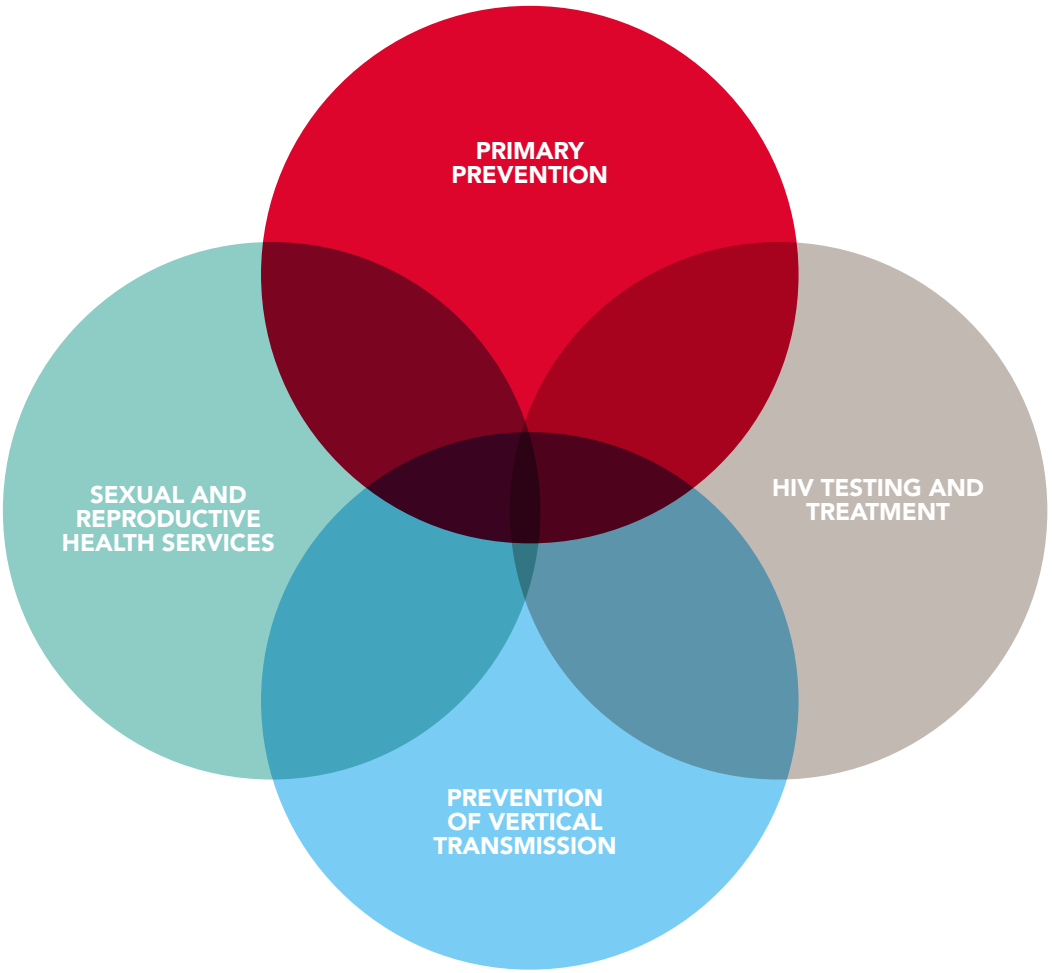
Six 95s for comprehensive HIV services

Comprehensive, high-quality HIV services are at the core of the HIV response. The 2025 HIV service targets are placed into categories, but in reality, there is considerable overlap between them. This reflects the fact that there are no clear divisions among HIV prevention, testing and treatment, the prevention of vertical transmission, and sexual and reproductive health services (Figure 23).

FIGURE 23

HIV service areas have considerable overlap

There are no clear divisions among HIV prevention, testing and treatment, the prevention of vertical transmission, and sexual and reproductive health services



HIV testing and treatment targets

95–95–95 testing and treatment targets achieved among people living with HIV within all subpopulations and age groups by 2025.

The steady decline in AIDS-related deaths—a 39% decline from 2010 to 2019—demonstrates the transformative benefits of HIV treatment for the health and well-being of people living with HIV. Experience has also shown a dose–response relationship between antiretroviral therapy and HIV incidence, with higher antiretroviral coverage reducing the rate of new infections. In 2018 and 2019, four clinical trials found that the rapid scale-up of community-centred HIV testing and treatment delivery towards the 90–90–90 targets reduced HIV incidence by 30% in diverse settings in six different African countries (51–54).

As the 90–90–90 targets were the most successful element of the Fast-Track agenda, new testing and treatment targets for 2025 maintain the same overall approach but adopt the more ambitious 95% objectives. They also clarify the need for achieving these targets within each subpopulation of people living with HIV.

The greater attention paid to subpopulations of people living with HIV reflects the current heterogeneity of testing and treatment coverage across these populations, which undermines the population-level preventative impact of treatment. For instance, globally and across regions, women have superior outcomes across the testing and treatment cascade compared to men, with 54% of men living with HIV having suppressed viral loads in 2019 compared to 65% of women living with HIV. Similarly, young people are less likely than older adults to know their HIV status and access treatment, and HIV treatment coverage among children living with HIV (53% in 2019) is well below the coverage for adults (68% in 2019). Many key populations also have poorer outcomes across the 90–90–90 cascade, due in part to the effects of stigma and discrimination and other structural factors, although more robust data are needed to quantify and clarify testing and treatment gaps and barriers among key populations.

Longitudinal studies in South Africa have demonstrated the impact of differences in treatment coverage among men and women. For example, higher treatment coverage among women translates to lower HIV-related morbidity and mortality among women, but when it comes to preventing HIV infections, it appears that men benefit more from women's stronger engagement with the health-care system and from the impact of local VMMC programmes *(55)*. Low treatment coverage and viral suppression rates among men therefore not only threaten their own health, but they also put women, especially adolescent girls and younger women, at greater risk of HIV infection. A similar study in Uganda shows that as treatment coverage and viral suppression rates among men increase, women's risk of HIV acquisition tends to decrease, especially if other combination prevention services are also in wider use *(56)*.

Differentiated testing and treatment strategies that build on community involvement: In place of the long-standing reliance on generalized facility-based testing, responses are increasingly emphasizing differentiated testing models, including diverse facility- and community-based approaches that can focus on communities at greatest risk and be tailored to individual and community needs. In rural communities in Kenya and Uganda, for example, use of multiple community-based strategies for HIV testing increased population-level knowledge of HIV status from 57% to 94% in two years *(51)*. Differentiated models of treatment delivery include multimonth dispensing and community models of care, such as community antiretroviral treatment delivery and adherence clubs *(2, 3)*.

The COVID-19 pandemic has created additional barriers to the uptake of HIV services and other health and social services. Countries that had differentiated service delivery strategies in place

have been better able to navigate these new barriers, and others have accelerated their efforts to increase community-led and community-based service options.

Focused efforts to improve retention in care and increase rates of viral suppression: Treatment attrition is a significant gap within the testing and treatment cascade in many treatment programmes *(57)*. According to a 2018 meta-analysis of HIV treatment programmes in sub-Saharan Africa, 22% of patients who were lost to follow-up had died *(58)*. Active adherence support, community and provider monitoring of those lost to follow-up, and strategies for re-engagement that are context-specific and people-centred have been shown to reduce programme attrition and increase rates of viral suppression *(59–62)*.

Innovative strategies to reach subpopulations that are often left behind: To achieve excellent outcomes along the testing and treatment cascade among young people and men, one recent test-and-treat trial focused outreach and testing services on high-traffic areas frequented by men or young people *(54)*. Another used community hubs to reach underserved men *(52)*. A trial in Kenya and Uganda implemented comprehensive men's health and sexuality counselling to make services more appealing to men, and a study in South Africa altered outreach hours to increase the likelihood of engaging more men *(51, 53)*. In Zimbabwe, a large-scale programme specifically designed for female sex workers more than doubled HIV treatment coverage among sex workers from 2011 to 2016—from 28% to 67% *(63)*.

Technological innovations to improve treatment quality and durability: The recent ATLAS and FLAIR trials demonstrate that monthly injection with the drugs cabotegravir and rilpivirine are as effective as daily oral therapy, offering a treatment approach that may be simpler and more convenient than oral daily dosing *(64, 65)*. In addition, a robust research pipeline continues to investigate new antiretroviral medicines, including those from additional classes.

TABLE 3

Detailed testing and treatment targets

Children (aged 0-14 years)	**Adolescent girls and young women (aged 15-24 years)**	**Adolescent boys and young men (aged 15-24 years)**	**Adult women (aged 25 years and older)**	**Adult men (aged 25 years and older)**	**People on the move (such as migrants and refugees)**
Gay men and other men who have sex with men	**Transgender people**	**Sex workers**	**People who inject drugs**	**People in prisons and other closed settings**	
95% of people within the subpopulation who are living with HIV know their HIV status					
95% of people within the subpopulation who are living with HIV and who know their HIV status are on antiretroviral therapy					
95% of people within the subpopulation who are on antiretroviral therapy have suppressed viral loads					

Meeting sexual and reproductive service needs and eliminating vertical transmission of HIV

- *95% of women of reproductive age have their HIV and sexual and reproductive health service needs met.*
- *95% of pregnant and breastfeeding women living with HIV have suppressed viral loads.*
- *95% of HIV-exposed children are tested by 2025.*

The 2025 targets prioritize sexual and reproductive health services for women living with HIV and women at elevated risk of HIV infection, and they reinvigorate the global push to eliminate new HIV infections among children and ensure that children living with HIV have timely access to life-saving treatment services.

Efforts to increase coverage of antiretroviral therapy among pregnant women living with HIV over the past decade—coverage reached 84% in 2019—has driven reductions in HIV transmission to their infants. These gains are insufficient on their own, however, as substantial numbers of children continue to acquire HIV. This is primarily due to a failure to continue providing women living with HIV and women at elevated risk of HIV with the HIV services they need throughout pregnancy and breastfeeding.

Addressing the challenges of sexual and reproductive health service delivery: Sexual and reproductive health services are critical for preventing HIV acquisition through sexual intercourse and mother-to-child HIV transmission during pregnancy, childbirth and breastfeeding. The three-country ECHO trial underscored the huge challenges faced by women of reproductive age in high HIV burden settings, with annualized incidence among trial participants ranging from 3.31 per 100 woman years to 4.19, despite the fact that these women were being regularly offered HIV prevention options during the trial *(66)*.

Changes are needed to better serve adolescent girls and women at high risk of acquiring HIV who are accessing contraception:

- Adolescent girls and women should have more contraceptive choices available in all types of service delivery settings, including family planning clinics and primary health-care clinics.
- Adolescent girls and women accessing contraceptive services—especially in high HIV burden countries—should have easy and affordable access to prevention and treatment services and quality integrated HIV and STI testing that are responsive to the rights and preferences of adolescent girls and women.
- The updated WHO recommendations for contraceptive eligibility for women at high risk of HIV should be disseminated widely and followed.
- The rights of adolescent girls and women to full and unbiased information should be guaranteed in all health-care settings and in the community.
- Contraceptive, HIV and STI services need to be part of a broader health response that includes services for primary health care and for sexual and reproductive health and rights in the context of universal health coverage *(67)*.

Frequent testing of pregnant and breastfeeding women in high HIV burden settings: In high HIV burden settings, women's risk of HIV acquisition increases during pregnancy *(68)*. Data reported to UNAIDS by the 21 focus countries for the elimination of mother-to-child HIV transmission indicate that 31% of HIV-exposed children are born to mothers who acquired HIV during pregnancy and breastfeeding. Among seroconversions that occurred in the 21 focus countries in 2019, young women (aged 15 to 24 years) accounted for 43%.

Intensified HIV prevention services, including but not limited to PrEP, can help reduce the number of women who acquire HIV during pregnancy or breastfeeding. More frequent testing, including during the third trimester and in the post-partum period, can reveal recent seroconversions and ensure rapid initiation of antiretroviral therapy to improve the mother's health and prevent HIV transmission to her child.

Intensified, differentiated testing strategies for children: The substantial number of children who are living with HIV but not receiving treatment stems from a combination of low coverage of early infant diagnostic services and inadequate implementation of multiple testing strategies (contact tracing with family, household and community testing) to find older children who acquired HIV while breastfeeding after two months of age or those who may have been missed by early infant diagnostic efforts. Point-of-care early infant diagnostic platforms—which can reduce turnaround time for testing results from a median of 55 days (for traditional early infant diagnostics) to one day—should be brought to scale quickly *(69)*. Where this is not feasible, turnaround times for early infant diagnostic results from a centralized laboratory must be reduced through improved specimen collection and the use of mobile technologies. For older children who are missed by early infant diagnostic services, family testing strategies are urgently needed *(70)*.

TABLE 4

Detailed targets for sexual and reproductive health services and eliminating vertical HIV transmission

Population	Target
Women of reproductive age in high HIV prevalence settings, within key populations and living with HIV	95% have their HIV prevention and sexual and reproductive health service needs met
Pregnant and breastfeeding women	95% of pregnant women are tested for HIV, syphilis and hepatitis B surface antigen at least once and as early as possible. In high HIV burden settings, pregnant and breastfeeding women with unknown HIV status or who previously tested HIV-negative should be re-tested during late pregnancy (third trimester) and in the post-partum period.
Pregnant and breastfeeding women living with HIV	90% of women living with HIV on antiretroviral therapy before their current pregnancy
	All pregnant women living with HIV are diagnosed and on antiretroviral therapy, and 95% achieve viral suppression before delivery
	All breastfeeding women living with HIV are diagnosed and on antiretroviral therapy, and 95% achieve viral suppression (to be measured at 6–12 months)
Children (aged 0–14 years)	95% of HIV-exposed infants receive a virologic test and parents provided the results by age 2 months
	95% of HIV-exposed infants receive a virologic test and parents provided the results between ages 9 and 18 months
	95–95–95 testing and treatment targets achieved among children living with HIV

Appropriate, prioritized, person-centred and effective combination prevention options

95% of people at risk of HIV infection use appropriate, prioritized, person-centred and effective combination prevention options by 2025.

HIV transmission dynamics differ greatly across and within regions and countries. They also vary by modes of transmission, and within and between population groups. Effective HIV prevention requires a granular combination approach that is differentiated according to location, population group and risk of HIV acquisition.

Combination prevention recognizes that individuals need to be provided with a choice of multiple tools to prevent HIV infection—including behavioural and biomedical approaches—to ensure that at least one will fit their current needs. Such choices are not fixed: the most appropriate tool will vary with the specific situation.

These tools must also be person-centred. The most effective tools and approaches are different across subpopulations (Tables 6 and 7). For instance, comprehensive sexuality education is a critical HIV prevention component for adolescents and young people, and keeping girls in school and empowering them economically has also been linked to lower HIV risk. Condoms are a cheap and effective option for many subpopulations at risk of HIV infection, but for sex workers, the triple prevention that condoms offer against HIV, STIs and unwanted pregnancy is unrivalled among all options for the prevention of sexual transmission. VMMC has been shown to be extremely effective in settings with high HIV prevalence and low circumcision rates, and comprehensive harm reduction—including sterile injecting equipment and opioid substitution therapy—is the foundation of HIV prevention among people who inject drugs. Increased access to PrEP has resulted in significant improvements in the impact of combination HIV prevention programmes among gay men and other men who have sex with men.

Preferences also differ within subpopulations. For example, one young gay man who has multiple sexual partners may prefer to use PrEP, another may prefer condoms and lubricant, and a third may engage in condomless sex with an HIV-positive partner who is confirmed to have suppressed his viral load to undetectable levels. The effectiveness of offering a variety of options has been demonstrated in New South Wales, Australia, where more than one third of gay men and other men who have sex with men have reported using PrEP, while nearly one quarter practice consistent condom use with casual partners *(71, 72)*. The 2025 targets for combination prevention are arranged in population-specific service packages that aim to provide individuals at higher risk with a choice of the prevention options that work best in specific circumstances.

Subpopulations may overlap. For example, sex workers and transgender people who inject drugs require harm reduction services. Conversely, people who inject drugs who engage in sex work require services to screen and treat STIs.

The 2025 targets also recognize that people in different geographic and social settings—as well as those with different behavioural attributes—have different levels of risk. HIV acquisition risk strata have been defined to guide prioritization of resources and interventions so that HIV prevention programmes can maximize their impact (Table 5). For example, wide-scale provision of PrEP to young women in low HIV prevalence settings would be expensive and prevent relatively few infections. However, in the highest HIV prevalence districts of eastern and southern Africa—and within large urban communities of gay men and other men who have sex with men in Europe and North America—PrEP has been an important addition to the HIV prevention arsenal.

An urgent need to elevate political support and financing for HIV prevention: The failure to date of expanded treatment access to achieve rapid reductions in HIV incidence has underscored the critical importance of primary HIV prevention. The launch of the Global HIV Prevention Coalition in 2017 focused renewed attention on HIV prevention targets, with all 28 focus countries having developed national prevention targets in line with the Coalition's HIV prevention 2020 road map. However, political support for HIV prevention is still lacking due to numerous factors, including the inherent complexity of HIV prevention, challenges in measuring impact (by showing that something—HIV infection—did not occur), lack of comfort in addressing issues of sexuality and drug use (especially among young people), and the fact that prevention needs are often greatest among populations that are socially marginalized and politically disfavoured. Insufficient political support for HIV prevention is reflected in HIV response financing data. From 2012 to 2017, international development assistance for HIV prevention declined by 44% *(73)*. Monitoring of national prevention spending by UNAIDS also indicates that many countries spend much of their finite prevention resources on approaches other than the five evidence-informed prevention pillars prioritized by the Global HIV Prevention Coalition *(74)*.

Synergistically combining evidence-informed prevention approaches: Effective HIV prevention involves a combination approach that offers multiple prevention options to people at risk of HIV. Data from Rakai, Uganda, demonstrates that the effect on HIV incidence is magnified when scaled-up HIV treatment is combined with expanded access to evidence-informed HIV prevention services *(75)*. Efforts to reach the 95–95–95 testing and treatment targets must be combined with robust efforts to scale up condom promotion, comprehensive sexuality education, VMMC, PrEP and harm reduction.

Leveraging innovations: Research continues to generate new tools and approaches for HIV prevention. The dapivirine vaginal ring has been found by two studies to reduce women's risk of acquiring HIV by more than a quarter *(76, 77)*. The European Medicines Agency has endorsed the ring, and it is rapidly moving into implementation *(78)*. Long-acting, injectable cabotegravir for PrEP has been shown in two studies to be superior to oral PrEP in preventing new HIV infections, with one study focused on women in sub-Saharan Africa and the other on gay men and other men who have sex with men and transgender women in Africa, Asia, Latin America and the United States *(79, 80)*. Efforts to design and evaluate preventive HIV vaccines continue, although it is anticipated that a preventive vaccine for HIV remains several years away at the very earliest.

TABLE 5

Thresholds for the prioritization of HIV prevention methods

	Criterion	Very high	High	Moderate and low
Sex workers	National adult (15-49 years) HIV prevalence	>3%	>0.3%	<0.3%
Prisoners	National adult (15-49 years) HIV prevalence	>10%	>1%	<1%
Gay men and other men who have sex with men	UNAIDS analysis by country/region	Proportion of populations estimated to have incidence >3%	Proportion of populations estimated to have incidence 0.3–3%	Proportion of populations estimated to have incidence <0.3%
Transgender people	Mirrors gay men and other men who have sex with men in absence of data	Proportion of populations estimated to have incidence >3%	Proportion of populations estimated to have incidence 0.3–3%	Proportion of populations estimated to have incidence <0.3%
People who inject drugs	UNAIDS analysis by country/region	Low needle–syringe programme and opioid substitution therapy coverage	Some needle–syringe programme; some opioid substitution therapy	High needle–syringe programme coverage with adequate needles and syringes per person who injects drugs; opioid substitution therapy available

	Criterion	High and very high		Moderate	Low
Adolescent girls and young women	Combination of [national or subnational incidence in women 15–24 years] AND [reported behaviour from DHS or other (>2 partners; or reported STI in previous 12 months)]	1–3% incidence AND high-risk reported behaviour	>3% incidence	0.3–<1% incidence and high-risk reported behaviour OR 1–3% incidence and low-risk reported behaviour	<0.3% incidence OR 0.3–<1% incidence and low-risk reported behaviour
Adolescent boys and young men	Combination of [national or subnational incidence in men 15–24 years] AND [reported behaviour from DHS or other (>2 partners; or reported STI in previous 12 months)]	1–3% incidence AND high-risk reported behaviour	>3% incidence	0.3–<1% incidence and high-risk reported behaviour OR 1–3% incidence and low-risk reported behaviour	<0.3% incidence OR 0.3–<1% incidence and low-risk reported behaviour
Adults (aged 25 and older)	Combination of [national or subnational incidence in adults 25–49 years] AND [reported behaviour from DHS or other (>2 partners; or reported STI in previous 12 months)]	1–3% incidence AND high-risk reported behaviour	>3% incidence	0.3–<1% incidence and high-risk reported behaviour OR 1–3% incidence and low-risk reported behaviour	<0.3% incidence OR 0.3–<1% incidence and low-risk reported behaviour
Serodiscordant partnerships	Estimated number of HIV-negative regular partners of someone newly starting on treatment	Risk stratification depends on choices within the partnership: choice of timing and regimen of antiretroviral therapy for the HIV-positive partner; choice of behavioural patterns (condoms, frequency of sex); choice of PrEP			

TABLE 6

Detailed HIV prevention targets for key populations

KEY POPULATIONS	Sex workers	Gay men and other men who have sex with men	People who inject drugs	Transgender people	Prisoners and others in closed settings
Condoms/lubricant use at last sex by those not taking PrEP with a non-regular partner whose HIV viral load status is not known to be undetectable (includes those who are known to be HIV-negative)	--	95%	95%	95%	--
Condom/lubricant use at last sex with a client or non-regular partner	90%	--	--	--	90%
PrEP use (by risk category) ■ Very high ■ High ■ Moderate and low	 80% 15% 0%	 50% 15% 0%	 15% 5% 0%	 50% 15% 0%	 15% 5% 0%
Sterile needles and syringes	--	--	90%	--	90%
Opioid substitution therapy among people who are opioid dependent	--	--	50%	--	--
STI screening and treatment	80%	80%	--	80%	--
Regular access to appropriate health system or community-led services	90%	90%	90%	90%	100%
Access to post-exposure prophylaxis as part of package of risk assessment and support	90%	90%	90%	90%	90%

TABLE 7

Detailed HIV prevention targets for the general population

GENERAL POPULATION		Risk by prioritization stratum		
		Very high	Moderate	Low
All ages and genders	Condoms/lubricant use at last sex by those not taking PrEP with a non-regular partner whose HIV viral load status is not known to be undetectable (includes those who are known to be HIV-negative)	95%	70%	50%
	PrEP use (by risk category)	50%	5%	0%
	STI screening and treatment	80%	10%	10%
Adolescents and young people	Comprehensive sexuality education in schools, in line with UN international technical guidance	90%	90%	90%

		Strata based on geography alone			
		Very high (>3%)	High (1-3%)	Moderate (0.3-1%)	Low (<0.3%)
All ages and genders	Access to post-exposure prophylaxis (PEP) (non-occupational exposure) as part of package of risk assessment and support	90%	50%	5%	0%
	Access to PEP (nosocomial) as part of package of risk assessment and support	90%	80%	70%	50%
Adolescent girls and young women	Economic empowerment	20%	20%	0%	0%
Adolescent boys and men	VMMC	90% in 15 priority countries			
People within serodiscordant partnerships	Condoms/lubricant use at last sex by those not taking PrEP with a non-regular partner whose HIV viral load status is not known	95%			
	PrEP until positive partner has suppressed viral load	30%			
	PEP	100% after high-risk exposure			

Removing societal and legal barriers to HIV services

The high levels of HIV service coverage called for in the 2025 targets can only be achieved within an environment where people living with HIV and people at risk of HIV infection feel safe to utilize those services. Unfortunately, this is currently not the case in many countries. HIV-related stigma and discrimination, gender inequality, and the criminalization of drug use, sex work and same-sex sexual relationships are powerful barriers to HIV services. The 2025 targets emphasize that countries must invest in specific efforts to remove these impediments and establish an enabling environment that is free of societal, political, legal and economic barriers *(81)*.

The targets within this section are framed as impediments to focus global attention on the reality of stigma and discrimination based on HIV status, punitive or harmful laws and policies, inequalities (gender-based, racial, economic and educational), and limited access to justice for people living with HIV, key populations and vulnerable populations (i.e., women, adolescent girls, migrants, refugees and incarcerated people). The targets call for more rapid removal of these impediments. The values for these targets (i.e., fewer than 10%) might seem numerically lower than the HIV service targets that call for 95% coverage, but the baselines for societal enablers often are lower and social change often is a slower process than programmatic scale-up. Nonetheless, achievement of these targets is central to progress across the full array of ambitious targets for 2025 and towards realizing the vision of zero new infections, zero discrimination and zero AIDS-related deaths.

Measuring the impact of the societal and legal environment: Two analyses of the negative impact of societal and legal impediments were conducted for the 2025 target-setting process. They found that these impediments contribute to new HIV infections and AIDS-related mortality by limiting access to services and by diminishing the effectiveness of HIV programmes.

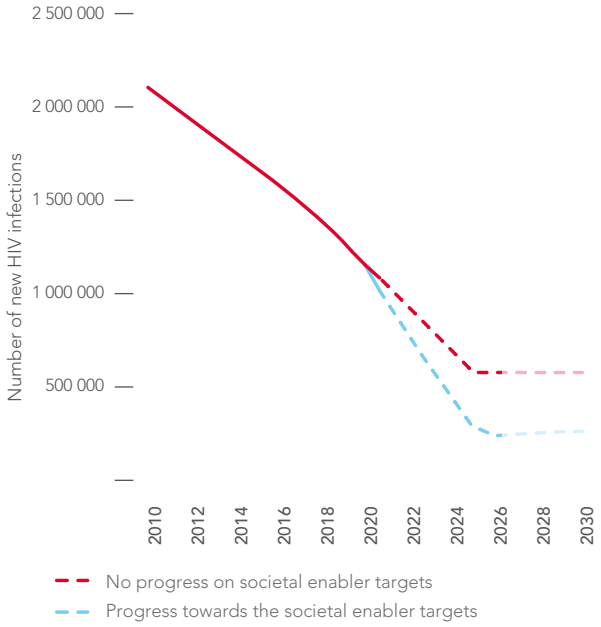
One analysis focused on available studies that have quantitatively measured the negative impact that stigma and discrimination and the criminalization of sex work, drug use and same-sex sexual relationships would have on HIV prevention, testing and treatment efforts *(82–88)*. The analysis suggests that failure to make any progress on HIV-related stigma and discrimination would undermine efforts to reach the HIV testing, treatment and viral suppression targets, resulting in an additional 440 000 AIDS-related deaths between 2020 and 2030, and that failure to make any progress across all societal enablers would undermine efforts to reach HIV prevention targets, resulting in 2.6 million additional new HIV infections over the same period (Figure 24) *(89)*.

The second was a multivariate statistical analysis of cross-sectional and longitudinal data from 138 countries. It found that countries with more enabling societal and legal environments had stronger positive correlations between HIV service coverage and HIV impacts. For example, as condom use by men at last high-risk sex increases, countries with favourable societal environments show stronger and steeper declines in HIV incidence since 2010 (Figure 25).[3] As condom use is projected to higher levels than current averages, reductions in HIV incidence are expected to be much greater in countries with the most favourable environments (the top quartile), which is reflected in the steeper slope for these countries.[4]

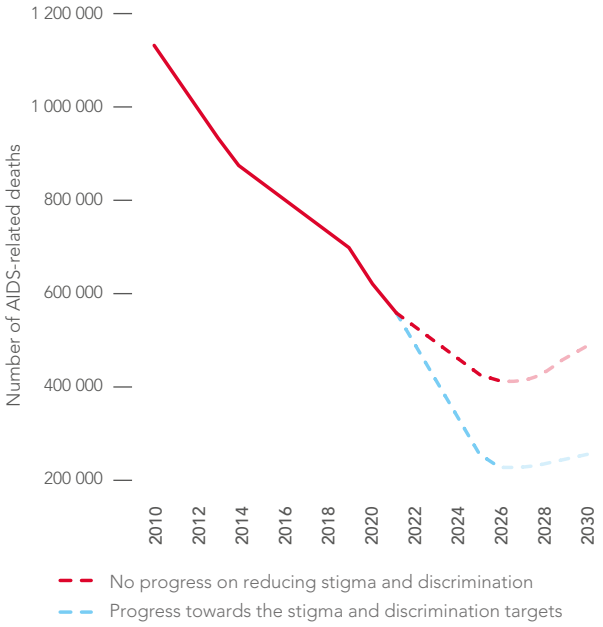
[3] In this analysis, condom use at last high-risk sex was defined as the percentage of men who reported use of a condom the last time they had sex with a nonmarital, noncohabiting partner among all men who reported having sex with a nonmarital, noncohabiting partner.
[4] At low levels of condom use (less than 40%), there was a higher percentage increase in HIV incidence over the last 10 years in countries with better social enabling environments because such countries had a lower baseline incidence.

FIGURE 24

Projected impact of progress made towards the societal enabler targets on the number of new HIV infections, global, 2010–2030



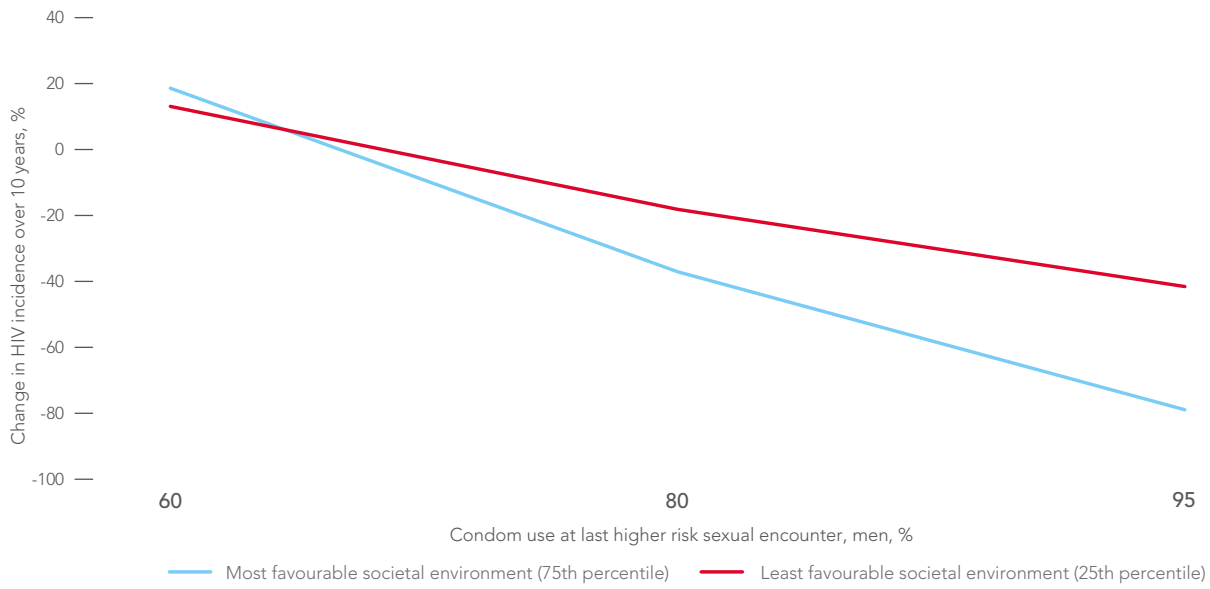
Projected impact of progress made towards the stigma and discrimination targets on the number of AIDS-related deaths, global, 2010–2030



Source: Special analysis by Avenir Health using data from UNAIDS/WHO/UNICEF HIV services tracking tool, November 2020; and UNAIDS epidemiological estimates, 2020 (https://aidsinfo.unaids.org/). See annex on methods.

FIGURE 25

Change in HIV incidence over 10 years in countries with favourable and unfavourable societal environments, by male condom use at last higher risk sex, 2010–2019



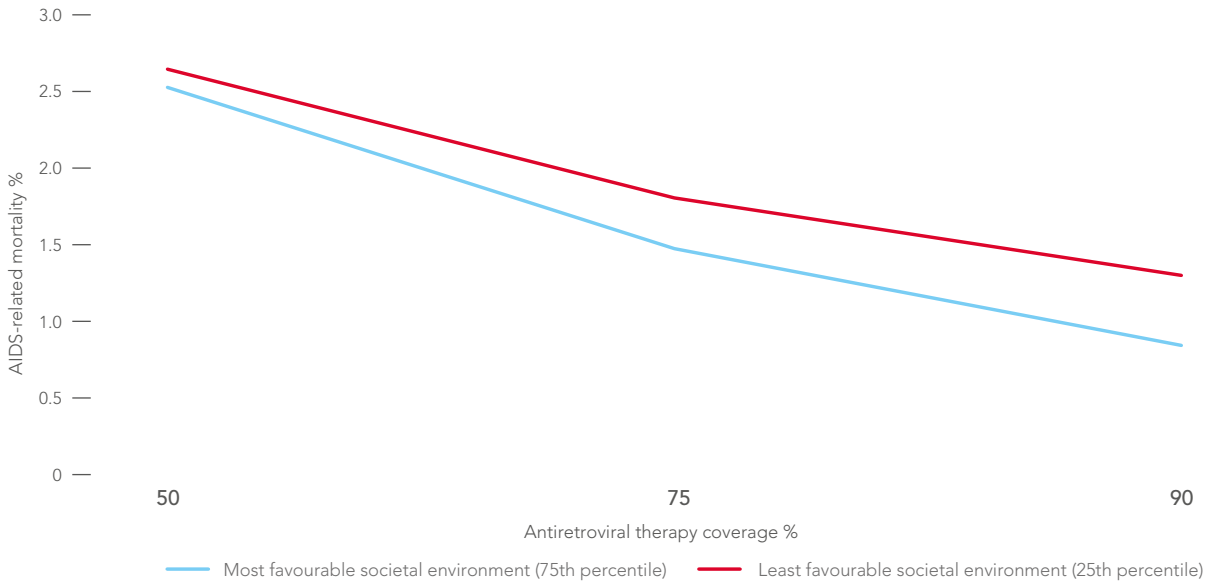
Source: Avenir Health special analysis using data from UNAIDS epidemiological estimates, 2020 (https://aidsinfo.unaids.org/); see methods annex.
Note: The level of the societal enabling environment is a composite indicator based on four groups of societal enabling environments: (1) gender-equal societies; (2) societies free from stigma and discrimination; (3) improved access to justice and punitive laws lifted; and (4) joint action with broader develoment sector.
The estimation was performed by applying multivariate panel regression data with structural equations modeling for the statistical analysis of unobserved constructs.

Similarly, larger declines in AIDS-related mortality among people living with HIV occur when antiretroviral therapy coverage increases in the countries with the most favourable societal environments, compared to countries with the least favourable societal environments (Figure 26). For HIV treatment, there is no significant difference in levels of AIDS-related mortality at low levels of coverage, but as treatment coverage increases to the level of the 2025 targets, there are lower mortality rates in countries with the most favourable societal environments: 0.9% AIDS-related mortality among people living with HIV compared to 1.4%—55% higher mortality—in countries with unfavourable societal environments.

The consistency across both analyses of the impacts of stigma and discrimination, criminalization and gender-based violence has underscored the value of setting ambitious targets for societal enablers and investing resources in achieving the targets.

FIGURE 26

AIDS-related mortality among people living with HIV by antiretroviral therapy coverage in countries with favourable and unfavourable societal environments, 2017–2019



Source: Avenir Health special analysis using data from UNAIDS epidemiological estimates, 2020 (https://aidsinfo.unaids.org/); see methods annex.
Note: The level of the societal enabling environment is a composite indicator based on four groups of societal enabling environments: (1) gender-equal societies; (2) societies free from stigma and discrimination; (3) improved access to justice and punitive laws lifted; and (4) joint action with broader develoment sector.
The estimation was performed by applying multivariate panel regression data with structural equations modeling for the statistical analysis of unobserved constructs.

Less than 10% of countries have punitive legal and policy environments that deny access to justice

- *Less than 10% of countries criminalize sex work, possession of small amounts of drugs, same-sex sexual behaviour, and HIV transmission, exposure or non-disclosure by 2025.*
- *Less than 10% of countries lack mechanisms for people living with HIV and key populations to report abuse and discrimination and seek redress by 2025.*
- *Less than 10% of people living with HIV and key populations lack access to legal services by 2025.*
- *More than 90% of people living with HIV who experienced rights abuses have sought redress by 2025.*

This target area aims to build on and accelerate encouraging momentum towards legal reform and access to justice in numerous countries and regions, applying lessons learned more broadly to bring legal and policy frameworks into line with the human rights underpinnings of an effective HIV response.

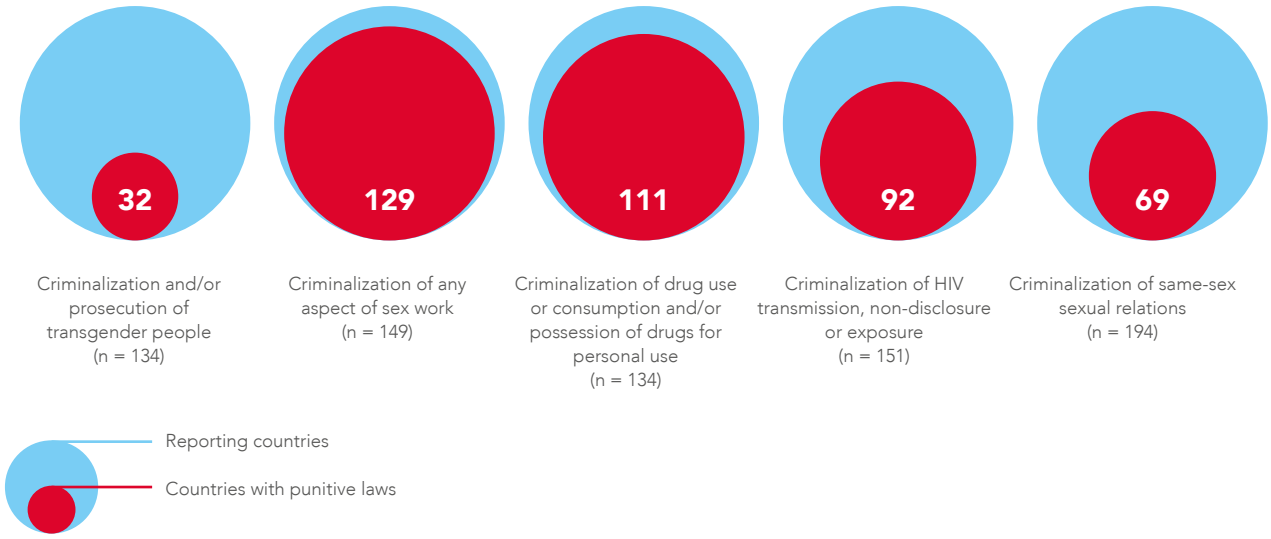
The impact of criminalization on people affected by HIV: Severe criminal penalties for same-sex sexual relations are associated with a 4.7 times higher risk of HIV infection compared with settings that lack such penalties *(90)*. According to an analysis of 75 countries, the existence of laws that marginalize or criminalize LGBTI people is also associated with substantially lower uptake of HIV testing services *(91)*. In 10 countries in sub-Saharan Africa, repressive laws regarding sex work are linked with increased HIV prevalence *(92)*. According to a 2017 systematic review, more than 80% of pertinent studies correlate criminalization of drug use with increased risk of HIV *(93)*.

Understanding the process of decriminalization: Decriminalization is a long-term process that unfolds along a continuum, offering the possibility of interim successes prior to the ultimate removal of criminal sanctions. Decriminalization itself is not the end of this process, but rather an intermediate, critical step towards the ultimate goal of creating environments that are just, equitable and enabling for an effective, people-centred response.

Building on successes to close the legal and policy gap: Punitive, discriminatory and scientifically unsound laws are the norm globally, and they have especially dire consequences for key populations, but recent experiences have underscored the feasibility of decriminalization and other forms of legal reform. Since 2016, Chile, Pakistan and Uruguay have formally recognized gender identity and introduced legal protections for transgender people. Senegal has legalized sex work. Globally, the number of countries and territories that have HIV-related restrictions in place for entry, stay or residence decreased to 48 in 2019. Countries such as Antigua and Barbuda, Belize, Colombia, Mexico, South Africa and various states in the United States have relaxed long-standing drug laws. The number of countries criminalizing same-sex sexual relations has continued to decline in recent years, with Botswana and India removing previous prohibitions. Since 2016, Colombia and Mexico have removed or relaxed their HIV criminalization laws, while Belarus, Canada and the Democratic Republic of the Congo narrowed the situations in which people living with HIV may be prosecuted or convicted.

FIGURE 27

Countries with discriminatory and punitive laws, global, 2019



Sources: UNAIDS National Commitments and Policy Instrument, 2017 and 2019 (see http://lawsandpolicies.unaids.org/); supplemented by additional sources (see references in Annex).

Learning from recent successes in rolling back punitive laws: More concerted efforts are needed to learn how legal reform has occurred and to understand how to apply and tailor these approaches to other settings. More effectively mining successful national examples can help identify optimal messages, effective strategies to cultivate new champions and coalition partners, and ways to synergize with broader social changes in order to encourage legal reform. In particular, countries that have recently enacted legal reform can encourage neighbouring countries to take similar actions.

Less than 10% of people living with HIV and key populations experience stigma and discrimination

- *Less than 10% of people living with HIV report internalized stigma by 2025.*
- *Less than 10% of people living with HIV report experiencing stigma and discrimination in health-care and community settings by 2025.*
- *Less than 10% of key populations (i.e., gay men and other men who have sex with men, sex workers, transgender people and people who inject drugs) report experiencing stigma and discrimination by 2025.*
- *Less than 10% of the general population reports discriminatory attitudes towards people living with HIV by 2025.*
- *Less than 10% of health workers report negative attitudes towards people living with HIV by 2025.*
- *Less than 10% of health workers report negative attitudes towards key populations by 2025.*
- *Less than 10% of law enforcement officers report negative attitudes towards key populations by 2025.*

Nearly four decades since AIDS was first documented, stigma and discrimination continue to slow or entirely block progress towards ending the epidemic. In 25 of 36 countries with recent survey data on a composite index of discriminatory attitudes, more than half of people aged 15 to 49 years displayed discriminatory attitudes towards people living with HIV (Figure 28). While discriminatory attitudes have consistently declined in some countries, notably in eastern and southern Africa, they are on the rise in others.

This new target aims to reduce sharply the prevalence of HIV-related stigma and discrimination. Taking account of the growing HIV burden among key populations and the pernicious effects of stigma and discrimination on efforts to address the HIV-related needs of key populations, this target area includes more detailed, population-specific targets.

The alarming prevalence of discrimination within health-care settings: Among 13 countries reporting recent data on discrimination in health-care settings, up to 21% of surveyed people living with HIV in Peru and Tajikistan said they had been denied health services at least once in the previous 12 months *(94)*.

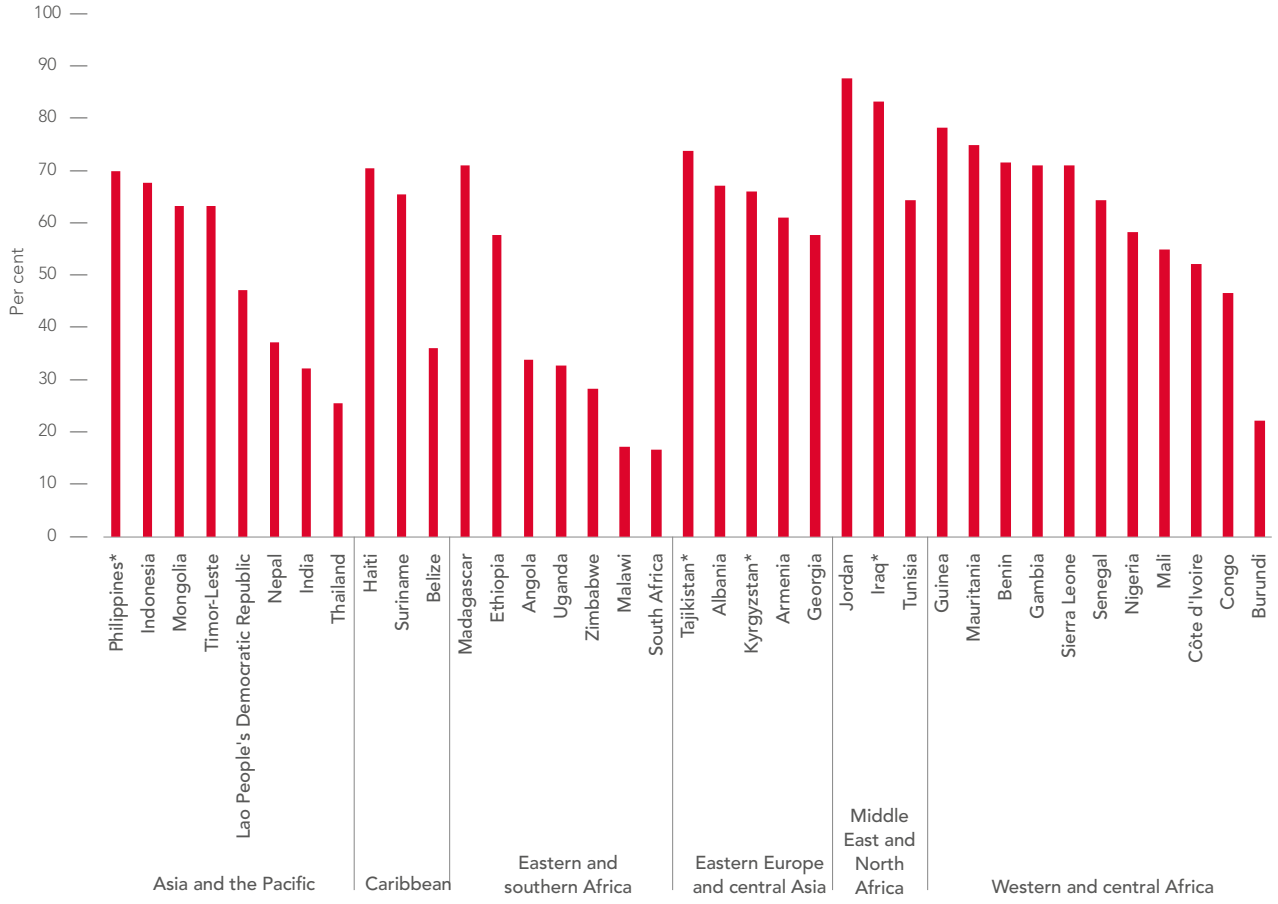
Effectively resourcing and scaling up evidence-informed human rights and anti-stigma interventions: A UNAIDS-commissioned systematic review of the impact of human rights interventions on HIV outcomes found that most studies (83%) reported a positive effect. The Global Fund's Breaking Down Barriers Initiative has funnelled important new resources (more than US$ 78 million in 2017–2019) to reduce human rights barriers to HIV, tuberculosis and malaria services in 20 countries *(95)*.

Supporting and empowering communities to fight stigma and discrimination: Through community-led monitoring, advocacy and programmes to ensure access to justice, communities are critical actors in aligning HIV responses with human rights principles. The Support. Don't Punish initiative—mobilized in at least 200 cities in 86 countries in 2020—is a global, grass-roots initiative promoting human rights-based harm reduction and drug policies *(96)*.

Leveraging new visibility of efforts to eliminate stigma and discrimination: The Global Network of People Living with HIV (GNP+), the nongovernmental organization delegation of the UNAIDS Programme Coordinating Board, UNAIDS, UN Women and UNDP joined together to launch the Global Partnership for Action to Eliminate all Forms of HIV-related Stigma and Discrimination (Global Partnership). In 2020, the Global Partnership began country implementation, partnering with governments and communities at the country level to take evidence-informed action against stigma and discrimination.

FIGURE 28

Percentage of people aged 15 to 49 years who report discriminatory attitudes towards people living with HIV, countries with available data, 2014–2019



*Data are for women aged 15 to 49 only.

Source: Population-based surveys, 2014–2019.
Note: Discriminatory attitudes are measured through "No" responses to either of two questions: (1) Would you buy fresh vegetables from a shopkeeper or vendor if you knew this person had HIV?; and (2) Do you think that children living with HIV should be able to attend school with children who are HIV-negative?

Less than 10% of women, girls, people living with HIV and key populations experience gender inequality and violence

- *Less than 10% of women and girls experience physical or sexual violence from an intimate partner by 2025.*
- *Less than 10% of key populations (i.e., gay men and other men who have sex with men, sex workers, transgender people and people who inject drugs) experience physical or sexual violence by 2025.*
- *Less than 10% of people living with HIV experience physical or sexual violence by 2025.*
- *Less than 10% of people support inequitable gender norms by 2025.*
- *Greater than 90% of HIV services are gender-responsive by 2025.*

This target area emphasizes the importance of ending violence against women, girls, people living with HIV and key populations. Gender-based violence is but one manifestation of gender inequality, which reduces the ability of women and girls to protect themselves from HIV. It perpetuates a gendered distribution of caretaking responsibilities and diminishes the educational and employment opportunities of women and girls. The new target also recognizes how unequal gender norms contribute to the vulnerability of key populations.

The unacceptably high prevalence of violence against women, girls and key populations: Nearly one in three women worldwide have experienced physical and/or sexual violence by an intimate partner, non-partner sexual violence or both in their lifetime *(97)*. The experience of sexual violence often begins at an early age: about 120 million girls are estimated to have suffered some form of forced sexual contact before the age of 20 years *(98)*. In about half of all countries with age-disaggregated data available, a greater percentage of adolescent girls (aged 15 to 19 years) had experienced intimate partner violence in the past 12 months compared to adult women overall *(99)*. Key populations are frequent victims of discrimination and abuse, with more than half of sex workers in eight of 36 countries with recently available data reporting having experienced violence. In four of 17 countries with survey data, more than 20% of gay men and other men who have sex with men reported experiencing violence, and high rates of violence against transgender people and people who inject drugs have also been reported in the limited number of countries with relevant data.

The effects of violence on HIV risk and health outcomes: The experience of intimate partner violence in high HIV prevalence settings increases the risk of acquiring HIV for women *(97)*. Women living with HIV who have experienced violence also have reduced access and adherence to treatment, lower CD4 counts and higher viral load *(100)*.

Multisectoral approaches to increase gender equality and reduce the vulnerability of women and girls: Cash transfers have been shown to help girls stay in school, increase the use of health services, delay sexual debut, reduce early marriage and teen pregnancy, and lower the risk of girls acquiring HIV *(101, 102)*. According to evidence from Botswana, every additional year of secondary schooling reduced young women's risk of acquiring HIV by 8.1% *(103)*. The engagement of faith leaders in gender-transformative approaches in the Democratic Republic of the Congo—and of men in reproductive and maternal health in Rwanda—have been associated with reduced sexual violence, improved contraceptive use, enhanced women's antenatal health, and the more equitable division of labour within households *(104, 105)*.

HIV POLICY LAB

The Global AIDS Monitoring system managed by UNAIDS compiles a wealth of data on HIV-related laws and policies. To maximize use of these data, UNAIDS has joined forces with Georgetown University, the O'Neill Institute for National and Global Health Law, GNP+ and Talus Analytics to launch the HIV Policy Lab (http://www.hivpolicylab.org).

The HIV Policy Lab is a data visualization and comparison tool that tracks national policy across 33 different indicators in 194 countries, enabling users to obtain an evidence-informed assessment of the policy environment. Indicators tracked by the HIV Policy Lab fall under four categories: clinical and treatment, testing and prevention, structural issues and health systems.

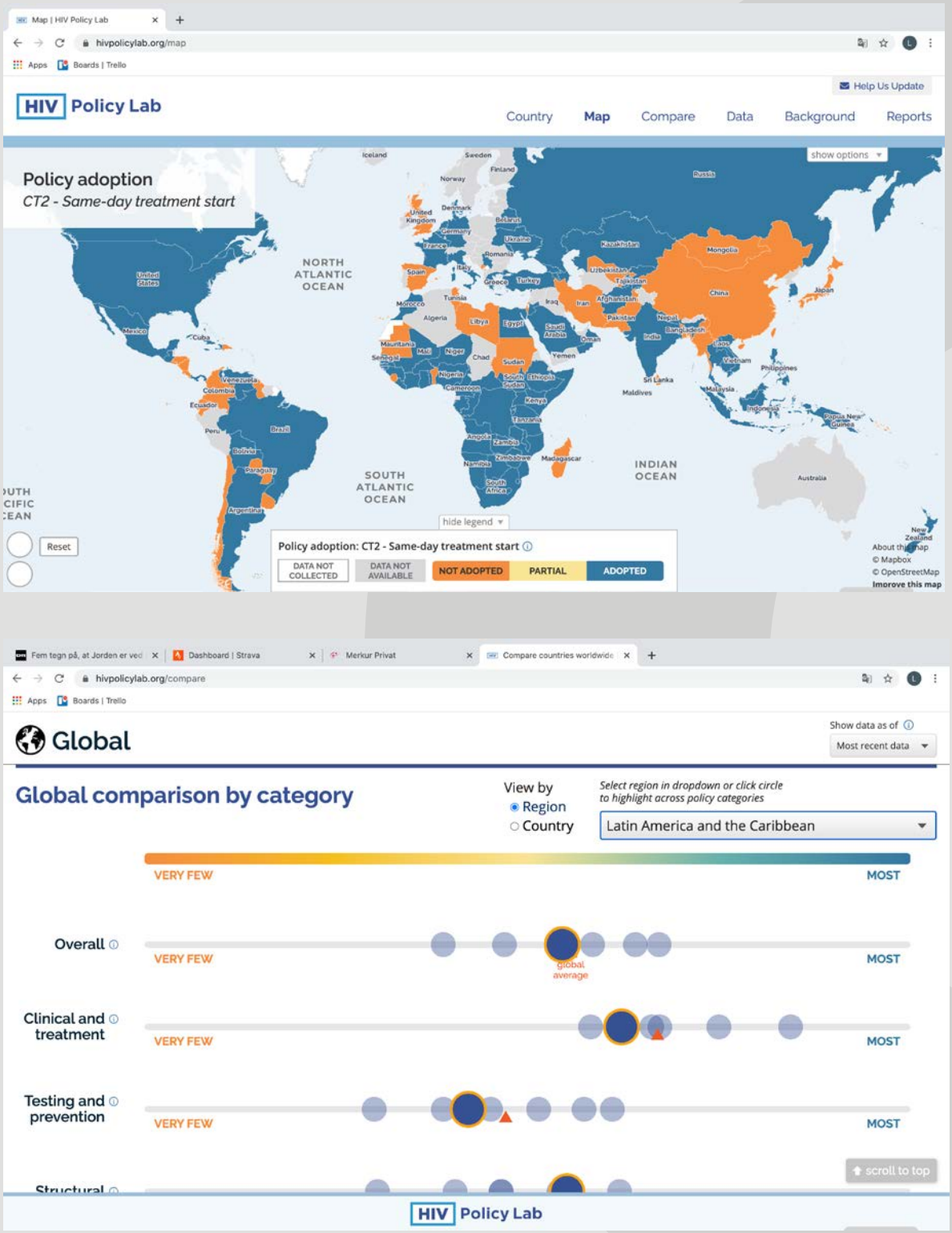
The tool aims to support efforts by civil society groups to advocate for legal and policy change in countries and to hold their governments to account. Governments themselves can also use the tool to guide their efforts to fulfil their commitments, and to benchmark their progress against countries in their region or those with similar economic and epidemiological situations. Regional and global partners can use the tool to identify good practices and amplify those experiences to advance the global agenda on reforming laws and policies so they enable the building of robust responses to HIV.

In the clinical and treatment category, users of the HIV Policy Lab can learn whether a country has adopted recommended policies on treatment initiation, same-day initiation, differentiated service delivery, viral load testing, paediatric diagnosis and treatment, access to health care for migrants and tuberculosis diagnostics. The HIV Policy Lab informs users whether a given country allows HIV self-testing, prohibits compulsory HIV testing, allows harm reduction programming, requires comprehensive sexuality education in primary and secondary schools, criminalizes HIV exposure or transmission, imposes user fees for health services, or prohibits discrimination based on sexual orientation, gender identity or HIV status.

In addition to understanding the policy environment in a specific country, users of the HIV Policy Lab can see how the country compares to others. Colour codes are used to identify whether the country has implemented none, few, many, most or all of the policies in any of the four policy categories, as recommended by international normative guidance.

FIGURE 29

Illustrations of data presentation on the HIV Policy Lab website



Integrated approaches that are people-centred and context-specific

Adoption of people-centred and context-specific integrated approaches that support the achievement of 2025 HIV targets and result in at least 90% of people living with HIV and individuals at heightened risk of HIV infection linked to services for other communicable diseases, noncommunicable diseases, sexual and gender-based violence, mental health and the other services they need for their overall health and well-being.

Rather than a disease or the capacity of health facilities, it should be people who are the guidepost for designing, delivering and assessing health services. One way to make health systems more people-centred is through service integration, with the goal of providing people-tailored, co-located or well-coordinated services that are optimally convenient, seamless and easy to navigate. Health integration aims to improve health programme performance across four dimensions: efficiency, effectiveness, equity and responsiveness.

Prioritizing high-value interventions that deliver spillover benefits: Integrated approaches that yield benefits not only for HIV but for other health priorities have the potential to generate broad-based health benefits and enable the pooling of budgets across sectors.

Evidence regarding the benefits of service integration: A recent systematic review and meta-analysis found that integration of HIV with other health services (such as maternal and child health care, tuberculosis care, primary health care, family planning, and sexual and reproductive health services) can increase uptake of HIV and other health services, improve retention of people living with HIV in care, achieve equivalent or improved treatment adherence and viral suppression, generate spillover health benefits, and reduce AIDS-related and non-AIDS-related mortality *(106)*. Study results were mixed as to whether integrated services were more or less costly than non-integrated services, but results indicate that integration of HIV with other health services is cost-effective *(106)*.

Deciding when and how to integrate: There is no either-or-choice between fully integrated and wholly fragmented service approaches. Different approaches to service integration may have both positive and negative effects, and there are opportunities for integration that fall well short of full-scale integration. In all cases, deciding when, how and to what degree to integrate should build on a thorough analysis and understanding of the health system environment, and of the needs of the people who need health services in a particular setting. Even in a more integrated system, specialization will and should remain an important element. To be effective, integrated approaches require concerted efforts to strengthen health systems, including ensuring that health policy frameworks support service integration in a manner that is people-centred. Health outcome monitoring and the agility to change course as needed in response to problems or opportunities should be prioritized. To inform decisions regarding when and how to integrate, better information is needed on the cost, cost-effectiveness and fiscal sustainability of integrated programmes in resource-constrained settings.

Integrating approaches for specific populations: Effective HIV care and support must be comprehensive and holistic, as people living with or at substantial risk of HIV often have health issues other than HIV. Tuberculosis remains the leading the cause of death among people living with HIV, with nearly 250 000 people living with HIV dying of tuberculosis in 2018 *(107)*. Compared to HIV-negative women, women living with HIV are about five times more likely to develop cervical cancer *(108)*. People with mental health conditions

are four to 10 times more likely than those without such conditions to acquire HIV, and people living with HIV are at elevated risk of developing mental health problems *(109)*. Survivors of sexual violence and people who have faced humanitarian catastrophes are among the populations more likely to be dealing with emotional trauma alongside health challenges. A comprehensive approach that highlights all aspects of health—physical, mental and emotional—is critical to successful outcomes.

As people living with HIV age, especially given the benefits of antiretroviral therapy in prolonging life, they are increasingly likely to experience common diseases of aging and other noncommunicable diseases. A recent study, for instance, found that 62% of Kenyans living with HIV have at least one noncommunicable disease *(110)*.

Adolescents can benefit from youth-friendly services that provide a broad array of youth-focused services. For women, introduction of point-of-care technologies for human papillomavirus (HPV) testing as part of a test-and-treat approach would be inexpensive and easy to implement alongside HIV services. For men, providing HIV testing alongside screening for noncommunicable diseases offers a potential strategy to improve testing coverage. Integration service packages specifically designed to address the health needs of key populations can be delivered, especially at service sites with proven capacity to deliver nonjudgmental, community-tailored services.

Leveraging progress towards universal health coverage: Although the financing of health services is theoretically distinct from the way that health services are organized and delivered, progress in bringing an entire population under a single coverage umbrella that is financed publicly is expected to increase momentum for more integrated approaches to primary health care. In too many countries, user fees deter access to HIV services, increase inequities, impoverish entire households affected by HIV and increase AIDS-related morbidity and mortality. Specific efforts will be needed to ensure that the move towards universal health coverage reflects the key attributes of the HIV response (including community engagement, inclusive governance, accountability for results and a commitment to human rights and gender equality), that all services provided either in a facility or a community setting are free of stigma and discrimination, and that service packages include essential HIV diagnostic, treatment and prevention services.

Migrant access to services: Many migrants face an uphill struggle in accessing health and HIV services. There needs to be concerted legislation that creates an enabling environment for migrants to access services, regardless of their status within the country. Legislation passed by Portugal to pave the way for regular and irregular migrants to access full health services provides a working model of service delivery that can be replicated elsewhere.

TABLE 8

Detailed targets for integration

Population	Target
People living with HIV	90% of patients entering care through HIV or tuberculosis services are referred for tuberculosis and HIV testing and treatment at one integrated, collocated or linked facility, depending on the national protocol. And 90% of people living with HIV receive tuberculosis preventive treatment.
	90% have access to integrated or linked services for HIV treatment and cardiovascular diseases, cervical cancer, mental health, diabetes diagnosis and treatment, education on healthy lifestyle counselling, smoking cessation advice and physical exercise.
Children (aged 0–14 years)	95% of HIV-exposed newborns and infants have access to integrated services for maternal and newborn care, including prevention of the triple vertical transmission of HIV, syphilis and hepatitis B virus.
Adolescent boys and young men (aged 15–24 years)	90% of adolescent boys (aged 15+ years) and men (aged 25–59 years) have access to VMMC integrated with a minimum package of services[5] and multidisease screening[6] within male-friendly health-care service delivery in 15 priority countries.
Adult men (aged 25+)	
School-aged young girls (aged 9–14 years)	90% of school-aged young girls in priority countries have access to HPV vaccination, as well as female genital schistosomiasis (S. haematobium) screening and/or treatment in areas where it is endemic.[7]
Adolescent girls and young women (aged 15–24 years)	90% have access to sexual and reproductive health services that integrate HIV prevention, testing and treatment services. These integrated services can include, as appropriate to meet the health needs of local population, HPV, cervical cancer and STI screening and treat, female genital schistosomiasis (S. haematobium) screening and/or treatment, intimate partner violence (IPV) programmes, sexual and gender-based violence (SGBV) programmes that include post-exposure prophylaxis (PEP), emergency contraception and psychological first aid.[8]
Adult women (aged 25+)	
Pregnant and breastfeeding women	95% have access to maternal and newborn care that integrates or links to comprehensive HIV services, including for the prevention of the triple vertical transmission of HIV, syphilis and hepatitis B virus.
Gay men and other men who have sex with men	90% have access to HIV services integrated with (or link to) STI, mental health and IPV programmes, SGBV programmes that include PEP, and psychological first-aid.
Sex workers	90% have access to HIV services integrated with (or link to) STI, mental health and IPV programmes, SGBV programmes that include PEP and psychological first-aid.
Transgender people	90% of transgender people have access to HIV services integrated with or linked to STI, mental health, gender-affirming therapy, IPV programmes, and SGBV programmes that include PEP, emergency contraception and psychological first aid.
People who inject drugs	90% have access to comprehensive harm reduction services integrating or linked to hepatitis C, HIV and mental health services.
People in prisons and other closed settings	90% have access to integrated tuberculosis, hepatitis C and HIV services.
People on the move (migrants, refugees, those in humanitarian settings, etc.)	90% have access to integrated tuberculosis, hepatitis C and HIV services, in addition to IPV programmes, SGBV programmes that include PEP, emergency contraception and psychological first aid. These integrated services should be person-centred and tailored to the humanitarian context, the place of settling and the place of origin.

[5] The minimum package of services delivered along with VMMC includes safer sex education, condom promotion, the offer of HIV testing services and management of STIs.
[6] Additional services such as diabetes, hypertension and/or tuberculosis screening, and malaria management. To be adjusted depending on the location.
[7] Low- and middle-income countries with HPV and HIV coinfections.
[8] For all subpopulations, PEP includes HIV testing and risk exposure assessment.

05

REACHING THE TARGETS

The COVID-19 pandemic has exposed the dangers of under-investment in pandemic response capacities. It has, however, also stimulated the acceleration of people-centred approaches to infectious disease prevention and control.

As the mixed results against the Fast-Track Targets show, setting ambitious targets is merely the first step in driving progress. To reach the destination of a world in which HIV is no longer a public health threat, these new targets require clear strategic direction, smart implementation and strong, sustained political commitment and community engagement.

A new strategy for the global response

In December 2019, the UNAIDS Programme Coordinating Board asked the Joint Programme to begin an inclusive, multistakeholder process to identify strategic priorities beyond 2021, when the current UNAIDS strategy ends. The consultative process has included the following:

- An independent evaluation of the UN system's response to HIV in 2016–2019.
- A comprehensive evidence review of implementation of the current UNAIDS strategy.
- An online survey in 16 languages that engaged more than 8300 respondents from 163 countries to elicit stakeholder feedback on key priorities and game-changers.
- Sixty-five in-depth reviews with stakeholders.
- Multiple focus group discussions with diverse stakeholders in all regions.
- A multistakeholder consultation.

In December 2020, the Programme Coordinating Board will examine the outcomes of this consultative process, review a first draft of an annotated outline of the new strategy, and provide direction for completion of the new strategy.

At its June 2020 meeting, the Programme Coordinating Board made a preliminary recommendation that the new strategy should retain the critical pillars and principles of the current UNAIDS strategy, while prioritizing critical areas where progress lags and greater attention is needed. The new strategy that is emerging from this process is a global AIDS strategy that aims to serve as a road map to accelerate progress at the global, regional and country level towards ending AIDS as a public health threat. For each result area, the new strategy will clarify the contribution and added value from UNAIDS towards achieving new strategic priorities, while also underscoring the urgent need for diverse stakeholders to contribute towards agreed results. The new strategy will more clearly situate the effort to end AIDS as a public health threat within the context of the broader SDGs, clarifying strategic linkages between the Goals.

A people-centred response that prioritizes equity

The consensus of the diverse stakeholders consulted is clear: for the next strategy to drive progress towards ending AIDS as a public health threat, people must be placed at the centre of the response. Services must be tailored to the needs of the communities most in need, and they must be flexible enough to adapt to local contexts. Communities must be engaged fully and supported as essential partners and leaders in the response.

The new strategy will need to prioritize equality and equity in the response, recognizing that AIDS cannot be ended as a public health threat unless it is ended for all populations affected by the epidemic. Following through on this equity agenda will demand urgent progress in addressing the societal and structural factors that increase HIV vulnerability, slow service uptake and worsen health outcomes. To accelerate progress towards ending the epidemic, principles of human rights and gender equality must be reflected more fully in the response, and the multisectoral approach of the HIV response—which links to the full array of development priorities—must be reinvigorated. Prioritizing equity in the response will also demand preparedness and agility to address HIV in the context of emergencies, humanitarian crises and rapid changes in the economic, societal and physical context.

Implementing the new strategy as an indivisible package

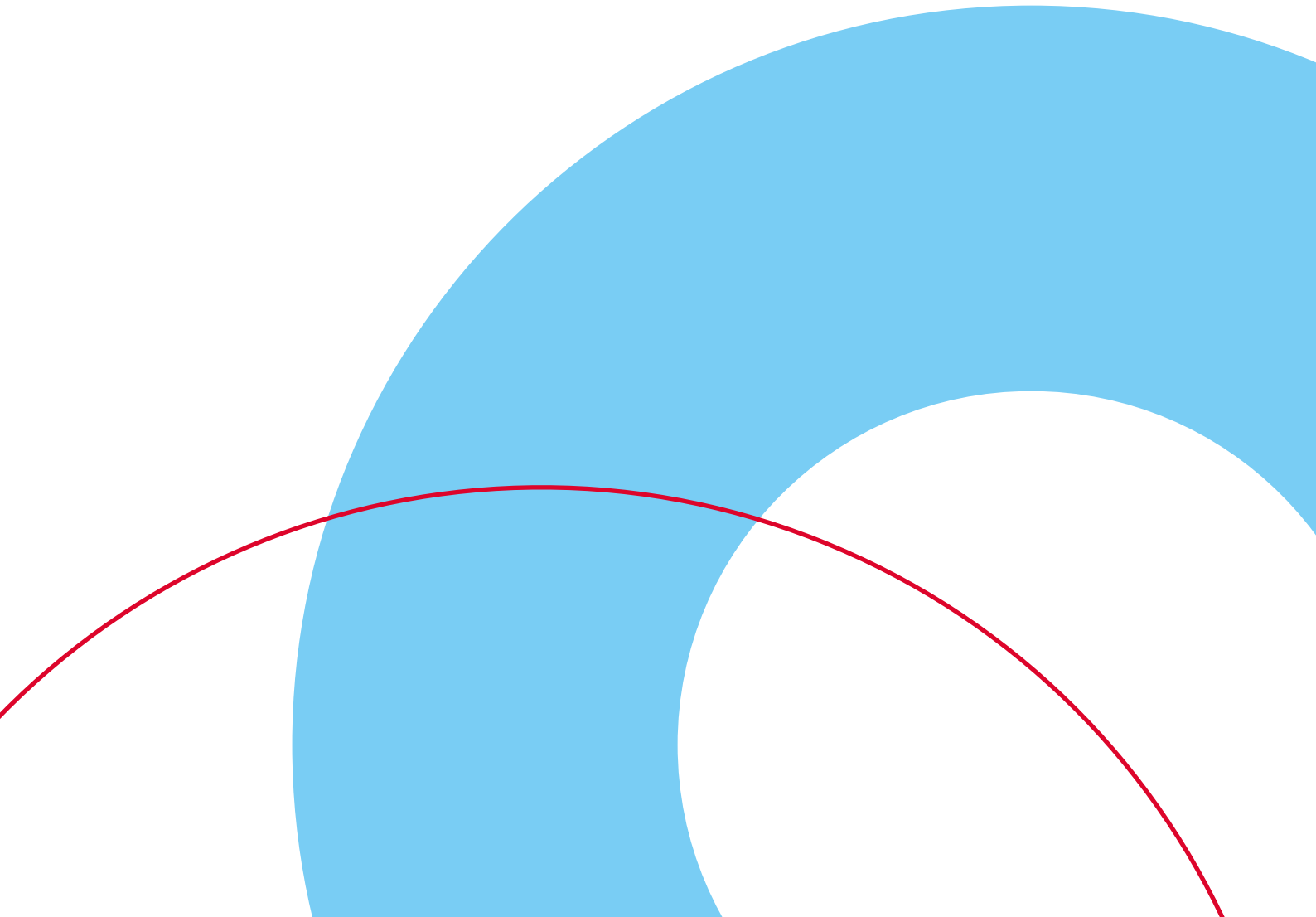
Experience during the Fast-Track era underscores the pitfalls of a pick-and-choose approach to fighting HIV. As flagging progress in the response indicates, the prevention benefits of treatment scale-up are muted when there is minimal support for the scale-up of primary HIV prevention. Likewise, the impact of programmatic implementation is limited when the response fails to address societal and structural barriers that impede service uptake. While promising, progress towards overall goals is insufficient when entire groups are left behind.

Global solidarity and commitment will be needed to secure the full set of 2025 targets and the new strategy as a single, indivisible package. Succeeding in implementing the easiest or most politically palatable elements of the strategy will not end AIDS as a public health threat unless the response also tackles the more challenging element of a cohesive, holistic approach to the epidemic.

Shared responsibility for resource mobilization and implementation

All stakeholders in the response will need to recommit to doing their part to achieve the 2025 targets. Although efforts should be redoubled to identify and leverage opportunities for cofinancing, especially with respect to societal and structural enablers, ending AIDS as a public health threat will not be possible without sufficient financial resources. This will require not only increased domestic investments in the HIV response, but also renewed commitment from the international community and innovative financing and intensified engagement of the private and philanthropic sectors.

The COVID-19 pandemic has exposed the dangers of under-investment in pandemic response capacities at the national and global levels. It has, however, also stimulated the acceleration of people-centred approaches to infectious disease prevention and control—approaches long called for by people living with HIV and other civil society activists. Collective global efforts that prioritize people can transform the COVID-19 crisis into an opportunity to accelerate both the HIV response and the efforts to achieve universal health coverage and the SDGs.



ANNEX
ON METHODS

Part 1. Methods for deriving global and regional HIV estimates of the number of people on treatment as of the end of June 2020

Global and regional measures of the number of people on antiretroviral therapy as of the end of June 2020 were abstracted from country programme data reported to the HIV Services Tracking Tool. Eighty-five countries reported treatment numbers that could be validated by UNAIDS and partners (representing 81% of all people estimated to be on treatment).

For countries where reported numbers of people on treatment are not available—primarily in western and central Europe and North America and the Russian Federation—estimates of the number of people on treatment were made based on previous reporting periods and unpublished sources. Estimates of the number of people on treatment in countries without published data may be overstated slightly, because the six-month change in the number of people on treatment from the end of 2019 to June 2020 (a period potentially impacted by COVID-19 disruptions) was calculated from the percent change in the number of people on treatment between 2018 and 2019 (a period not affected by COVID-19 disruptions). Regional estimates of the numbers of people on treatment in western and central Europe and North America are not published for June 2020 due to the limited number of countries reporting data for the end of 2019 and mid-year 2020.

Although UNAIDS works closely with countries and multilateral partners to ensure the accuracy of reported and estimated numbers of people on treatment, country data may overestimate the number of people on treatment if people who transfer from one facility to another are reported by both facilities, or if people who have died, disengaged from care or emigrated are not identified and removed from treatment registries. Treatment numbers also may be underestimated if not all clinics report the numbers on treatment completely or in a timely manner. Due to COVID-19 disruptions, any of these biases could be occurring on a different scale than was previously the case, so caution should be taken when interpreting trends in treatment scale-up over time. Furthermore, uncertainty bounds around the point estimate may not fully capture additional uncertainties due to COVID-19 service disruptions.

Part 2. Methods for collecting and analysing HIV service disruption data reported through the HIV Services Tracking Tool

Starting in June 2020, with retrospective reporting from January, national focal points were requested

to submit monthly data to the United Nations Children's Fund (UNICEF), WHO and UNAIDS on the provision of HIV services in the months before and during the COVID-19 pandemic. Data were submitted through the HIV Services Tracking Tool, an adaptation of an existing online tool (the Global AIDS Monitoring Tool) that has previously been used by countries to report annually against more than 70 HIV-related global indicators.

For the purposes of reporting on potential COVID-19-related disruptions, a subset of 13 indicators were selected. Indicators correspond to the provision of HIV testing and treatment services, including services to prevent mother-to-child transmission and available HIV outreach services to key populations. Reports of sexual and gender-based violence also were collected. Countries were asked to report on the proportion of facilities offering services during the month, where relevant to the indicator.

Monthly data reported by countries between January and September 2020 were used to identify potential disruptions in services due to COVID-19. Analysis was limited to months in which countries reported at least 50 individuals reached or services provided, with at least 50% of facilities reporting data. For each indicator, the overall percent change in the number of services offered was constructed, compared to an average of services provided in January and February. Relative percent changes in service delivery are reported for those countries with at least six months of data.

The quality and representativeness of the reported country data are subject to limitations that should be considered when comparing results over time and within and across countries. For example, when facility reporting coverage drops below 50% for any month, these data have been removed to avoid comparing a month of services from a small proportion of facilities with a month where all facilities have reported. However, fluctuations in the number of facilities that reported over time is itself a potential indicator of a service disruption, and in these cases, the true magnitude of the disruption will be undercounted.

A second limitation is related to considering the average of services delivered in January and February to be the baseline for comparison to subsequent months of services (although some countries and services may experience season-influenced patterns of uptake). Because data from the same month during the COVID-19 pandemic are not available in previous years for comparison—and because services also may have been scaled up since that period—the average of the two months prior to COVID-19 disruptions is believed to provide the most robust measure for comparison.

Part 3. Methods used to estimate the impact of achieving the targets

The epidemiological impact of achieving the 2025 and 2030 targets was estimated using the Goals model and verified with two other models: Optima HIV and the AIDS Epidemic Model (AEM). Goals is a mathematical simulation model that estimates HIV incidence on the basis of behaviours (e.g., number of sexual partners, number of sex acts per partner, age at first sex and use of non-sterile injecting equipment), epidemiological factors (e.g., probability of transmission per act given the type of sex or use of non-sterile injecting equipment, the stage of infection and presence of other STIs), biomedical interventions that reduce the probability of transmission (e.g., antiretroviral therapy, condom use, VMMC and PrEP) and behavioural interventions that affect high-risk behaviours (e.g., outreach to key populations, comprehensive sexuality education, economic empowerment, needle–syringe exchange programmes and opioid substitution therapy) *(111)*. The Goals Age-Structured Model (Goals-ASM), which stratifies populations' behaviours and HIV dynamics by age, was applied to the countries in

sub-Saharan Africa with generalized epidemics; the Goals Risk-Structured Model (Goals-RSM), which stratifies populations' HIV dynamics by risk behaviours (e.g., sex work, same-sex sexual contacts, injecting drug use and multiple partners) was applied to countries outside of sub-Saharan Africa.

Goals models were set up for 39 countries in sub-Saharan Africa and 38 countries outside of sub-Saharan Africa that together accounted for 94% of new HIV infections and 95% of AIDS-related deaths. Data for the models are drawn from a variety of sources:

- Demographic data from the United Nations Population Division's World Population Prospects *(112)*.
- Key population sizes from the UNAIDS Key Population Atlas *(113)*.
- HIV prevalence and behavioural data from national household surveys (primarily DHS and PHIA) *(114, 115)*.
- Integrated HIV biobehavioural surveillance surveys, and current intervention coverage from the UNAIDS's Global AIDS Monitoring System *(116)*.

For each country, the model is fit to HIV prevalence by risk group and age. For each intervention, the impact of scaling up interventions to meet the 2025 and 2030 targets on the probability of transmission per act and on behaviours is based on published studies of intervention efficacy *(111)*.

Goals models were run for each country to assess the expected trends in new infections and AIDS-related deaths resulting from achieving the targets. For each indicator, the sum for all modelled countries was adjusted upward to produce a global estimate that accounts for countries that were not modelled.

The Programme Impact Modelling Advisory Group (PIMAG) guided the approach to modelling impact and reviewed the results. The Goals results were validated by comparing them against results from the Optima HIV model for Eswatini, Malawi, Sudan and Zimbabwe and the AEM for Cambodia, Indonesia and Myanmar *(117, 118)*. The results of all three models were consistent regarding the magnitude of the impact to be expected from achieving the 2025 and 2030 targets.

Part 4. Assessing the impact of societal enablers on HIV outcomes

The UNAIDS 2025 target-setting exercise explicitly includes the impact of societal enablers. The societal enablers are grouped into four broad categories: HIV-related stigma and discrimination, access to justice, gender equality, and other social development areas of co-action. Interventions in these areas do not directly affect HIV transmission; rather, they create an environment that facilitates safer behaviours, which do affect HIV transmission. These behaviours might include willingness to test, initiate antiretroviral therapy, adhere to treatment, or use condoms or PrEP. Modelling the impact of societal enablers is difficult because global targets have already been set for testing, treatment and the use of condoms and PrEP. These targets implicitly assume that barriers to achieving those targets have been removed.

Two type of analyses were conducted to show the effect or moderation of the societal enablers on HIV outcomes:

1. Modelling of the impact on achievement of coverage targets based on evidence of specific societal enablers influencing the scale-up of key HIV-related services.

2. Statistical analysis on data from 138 countries to assess the moderating effect of the societal enabling environment on the effectiveness of condom use on HIV incidence change and of antiretroviral therapy coverage on AIDS-specific mortality.

The first approach consisted of applying the odds ratio of known barriers documented in the scientific literature on how specific societal enablers limit access to services, thus limiting the ability of countries to reach the 95–95–95 testing and treatment targets or the prevention targets by 2025. This approach models the impact of societal enablers by assuming that, in the absence of progress, the global targets cannot be achieved. The modelling can estimate the increase in new HIV infections and AIDS-related deaths that would result from these reduced achievements.

HIV-related stigma and discrimination

Stigma and discrimination refer to at least three different manifestations of stigma: community-level discrimination, health-care provider discrimination and internalized stigma. Some studies have examined the effects of internalized stigma on access to care and treatment:

- A study among gay men and other men who have sex with men in New York City found an adjusted odds ratio of 0.54 for the likelihood of testing for HIV in the previous month *(119)*.
- An analysis of PopART data in South Africa and Zambia found an adjusted odds ratio of 1.71–1.82 for late linkage to care *(120)*.
- A meta-analysis of studies from low- and middle-income countries found adjusted odds of 2.4 (1.6–3.6) for late presentation to care for those with internalized stigma *(121)*.
- A meta-analysis of studies on adherence by Katz et al. found an odds ratio of 1.74 for non-adherence to treatment among those with stigma *(122)*.
- Analysis of PopART data on viral suppression found an adjusted relative risk of 0.83 for viral suppression among those with internalized stigma *(123)*.

We have used these studies to estimate the effects of internalized stigma on the treatment cascade: knowledge of status, treatment and viral suppression. If we assume that the global goals of 95–95–95 can be achieved only in the absence of internalized stigma, then for those with internalized stigma, the maximum achievements might be 83–79–84 (as shown in Table 1).

TABLE 1

Impact of internalized stigma on 95–95–95 targets

Component	Study	Indicator	aOR	Odds of 90	Odds with stigma	Achievement with stigma
Testing	Golub and Gamarel (2013)	Likelihood of testing	0.54	9	4.86	0.83
Linkage	Sabapathy et al. (2017)	Late linkage to care	1.71–1.82	9	5.10	0.84
	Gesesaw et al (2017)	Late presentation to care	2.4 (1.6–3.6)	9	3.75	0.79
Adherence	Katz et al. (2013)	Non-adherence	1.74	9	5.17	0.84

These lower cascade values would affect the proportion of people living with HIV with internalized stigma. In the PopART study, about 22% of people living with HIV experienced internalized stigma *(123)*. Using that proportion, the maximum cascade values would become 88–88–89. We ran the Goals model for each of 77 countries and set the 2025 and 2030 targets to 88–88–89 (or the current cascade values, if they are higher).

A global programme to reduce stigma would include interventions to address internalized stigma, health-care worker discrimination and community norms. This analysis is focused only on internalized stigma, so it might underestimate the impact of a full programme, or internalized stigma may be a good indicator of all forms of stigma and discrimination.

Access to justice

The impact of decriminalization has been addressed by Shannon et al. in work that modelled the effects of the criminalization of sex work and found a roughly 40% reduction in new infections among sex workers over a 10-year period in Vancouver, Mombasa and Bellary, India *(124)*. For people who inject drugs, Borquez et al. estimated that decriminalization in Mexico, coupled with opioid substitution therapy, could prevent 21% of new infections *(125)*. Data from the UNAIDS Key Population Atlas indicate that 34% of 192 countries have laws that criminalize same-sex sexual activity, and that 80% of 134 countries criminalize sex work.

We estimated the effects of achieving decriminalization targets by applying the reductions in new HIV infections found in the Shannon et al. and Borquez et al. studies to countries that currently criminalize sex work and injecting drug use. This suggests that not achieving decriminalization in all countries would result in about 750 000 cumulative new HIV infections from 2020 to 2030.

Gender equity

Gender equity is a broad topic that includes all of the societal norms that place girls and women at increased risk of HIV. For the purposes of costing and modelling, it may be appropriate to focus on gender-based violence as an important and signal component of gender equity. Data on the extent of gender-based violence are available from a number of national surveys, including the DHS. There is a rich literature on approaches and effects to reduce gender-based violence, and several efforts are underway to synthesize this information, including a new What works document on gender-based violence, a new framework for prevention (RESPECT) and an effort by UNFPA to estimate the cost and impact of ending gender-based violence by 2030. A preliminary estimate of the global costs was presented at the ICPD+25 conference in Nairobi in November 2019, and efforts are continuing to update the cost and impact estimates with the cooperation of a number of research institutes and UN organizations. That work provides a basis for identifying the standard package of services, focus populations, costs and impacts in terms of reducing the incidence of intimate partner violence.

The ongoing work does not address the linkage between gender-based violence and HIV, but other studies have examined that association. Theoretically, gender-based violence can lead to more unprotected sex and an increased prevalence of other STIs, and to reduced testing and adherence to treatment and biomedical prevention. Leddy et al. found a large number of studies that reported on these relationships in a variety of settings *(126)*. The results were mixed, but they generally supported the idea that women

experiencing gender-based violence were less likely to link to care and less likely to adhere to treatment. Results on testing were mixed, with some studies showing increased testing and others the opposite *(126)*.

The research is less clear on whether interventions to reduce gender-based violence would lead to high-risk behaviour, or whether perpetration of gender-based violence is associated with high-risk behaviours that would persist even if the violence ended. Several studies have reported an association between violence and HIV infections in South Africa, with an incidence rate ratio of 1.51 (1.04–2.21) for the effect of intimate partner violence on HIV incidence *(127, 128)*.

An initial analysis by UNFPA of the impact of scaling up programmes to prevent intimate partner violence estimated that a global programme to scale up prevention services could avert 14% of intimate partner violence cases by 2025 and 29% by 2030 *(129)*. This implies that a global programme to prevent intimate partner violence might avert up to about 75 000 new HIV infections from 2000 to 2030.

The second approach was a series of statistical analyses based on data from 138 countries, which included sequentially the statistical analysis using Seemingly Unrelated Regression (SUR), Structural Equation Modelling (SEM) and panel data multivariate regression. The analysis included the same four societal enablers: access to justice and law reform, gender equality, stigma and discrimination, and co-action with broader development sectors.

Twenty-one predictors for each of these four broad groups of enablers/barriers were included:

- The People Living with HIV Stigma Index
- Reports of discrimination accessing health services by women
- Reports of physical or sexual abuse by women
- Reports of psychological abuse by women
- Reports of discrimination accessing health services by members of key populations
- Reports of physical, sexual by members of key populations
- Acceptance of same-sex sexual behaviour
- Drug use or possession for personal use an offence
- Criminalization of sex work
- Same-sex sexual acts or other punitive laws affecting LGBTI people
- The Rule of Law Index
- The Gender Development Index
- Violence against women
- The Gender Parity Index
- Access to clean water
- Literacy rate
- Adult total (% of people aged 15 years and above)
- Proportion of population living below the national poverty line (%)
- Completion rate of lower secondary studies, etc.
- Human Development Index
- Income level of countries

SEM allows more than one dependent variable in the model. The HIV outcome variables were HIV incidence rate per 1000 population, relative change of incidence over the last 10 years, and AIDS-related mortality among people living with HIV *(130)*. The independent variables included condom use by men at last high-risk sexual encounter, antiretroviral therapy coverage and CD4 level at entry to treatment *(131)*.

Standard multiple imputation techniques and interpolation were used to maximize the number of countries included in the statistical analysis for missing datapoints.

The predictors of each of the societal enablers were entered into the SEM modelling to analyze unobserved constructs. Each of the four constructs were used to create a composite variable indicating the societal enabling environment.

All variables were analyzed after being standardized with mean zero and standard deviation of 1.

The focus of the interpretation was on the statistical significance of the moderation effect (i.e., when the relationship between the HIV programme and the HIV outcome was differential at various levels of ART coverage or use of condoms) due to the enabling environment.

For didactic purposes, the graphs included in the World AIDS Day report show the relationship between the relative change of HIV incidence by levels of condom use at last high-risk sexual encounter and AIDS-related mortality among people living with HIV for two levels of societal enabling environments: countries on or below the first quartile (to indicate the countries with the most unfavourable societal environments) and countries at the top 25% (to indicate the countries with the most favourable societal environments).

The total effect between countries having more or less favourable societal environments would be the area between the two curves. The point estimate for the effect when reaching the 2025 targets would be the odds ratio when reaching such coverage (i.e., 95% condom use or 90% antiretroviral therapy coverage). As an example, the odds ratio when countries reach 90% antiretroviral therapy coverage is 1.46 in favour of the countries with better societal enablers.

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